THE WAYSIDE FLOWERS OF SUMMER

HARRIET L. KEELER

Dear Basie —

To go with the auto. —

Herrick L. Ruler

May 1917

BOOKS BY HARRIET L. KEELER

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THE WAYSIDE FLOWERS OF SUMMER

Swamp Rose-Mallow. *Hibiscus Moscheùtos*

THE WAYSIDE FLOWERS OF SUMMER

A STUDY OF THE CONSPICUOUS HERBACEOUS PLANTS BLOOMING UPON OUR NORTHERN ROADSIDES DURING THE MONTHS OF JULY AND AUGUST

By HARRIET L. KEELER

ILLUSTRATED BY MARY KEFFER

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Published May, 1917

TO

MARY SHELLEY PECHIN

HER FRIEND DEDICATES
THIS VOLUME

CONTENTS

PAGE

Introduction ix

Genera and Species xv

Illustrations xxiii

Descriptions of Midsummer Flowers . . . 3

Glossary of Botanical Terms 275

Color List 279

Index of English Names 281

Index of Latin Names 285

INTRODUCTION

Summer flowers of the roadside in the meaning of this volume are the herbaceous plants ordinarily found in bloom on the roadsides of our Northern States during the months of July and August. It is true that summer officially begins with the 21st of June, but it is not until July that the full flood of the season's flora is upon us; and, although summer officially continues until the 22d of September, the prevailing flowers of September, the Goldenrods and the Asters, are the flowers of autumn. The plants described in this volume are those that the wayfarer, starting out upon his summer vacation, will most likely meet if he goes on foot, or pass if he takes an auto, or see from the windows of his moving train; they are the ones that are part and parcel of summer life, that are ever in sight, that surround him at every turn. In round numbers they vary from one hundred and twenty-five to one hundred and fifty.

This is about the number of conspicuous plants that habitually leap the fences and stand by the roadside. There is no thought of making this volume a catalogue —plants that are not conspicuous are omitted, also those like the Orchids that are rare. The book stands for an effort to make the common wayside flowers familiar to the general public by sight and by name.

If it adds to the summer pleasure even of a few, it will have served its purpose.

In early July the fields that border the roads are a joy and a delight. The grass is just ready for the harvest, the fields of wheat ripple and wave and yield to the passing breeze, and color other than green is seen in the distance.

When a delicate mist of white with a pinkish cast hangs over a meadow, it means that the Fleabane, a blossom that looks like an attenuated White Aster, has taken possession. If the white is more opaque, it indicates the presence of the Ox-Eye Daisy, a plant loved by artists but not by farmers. A yellow field may be one of two: a field of Early Mustard or, as is more likely, a field of Buttercups, beautiful to look at, but whose presence convicts the farmer. There are many fields of Red Clover, sweet with the music of bees; more rarely in certain elect places one finds fields of Alsike Clover, pink and white; everywhere along the way the White Clover is in bloom and now the Yellow Clover, having the yellow of the Mustard, and the poise of the Clover, runs along the sterile places and climbs the sandy slopes of the roadside.

The Docks having established themselves by sheer strength are sending up their flowering spikes, green at first, but soon to be golden brown, the outward and visible sign of an inward vitality rare to see and difficult to overcome. The wild Lettuce, the Mullein, the Chicory, with many others, having left their rosettes behind them, are stretching up and looking out over the world to see what there is to conquer.

The Burdocks are fighting for the footpath, the tall, gaunt, awkward stems of the Teasel bearing their

black heads are rapidly disappearing before the claims of the younger generation. The vines of the Wild Morning-Glory have taken possession of the wire fences, and the tangles of the fence corners, are adorable with youth and beauty, for June has just melted into July and the high-tide of the year is upon us. One by one the members of the choir show in their places, and by the middle of July the full chorus is well under way.

Of the one hundred and fifty plants noticeable on our summer roadsides, sixty-five are aliens; Asiatics, Europeans, Central Americans. They were not born yesterday. They have been upon their travels for ages. They are the vagabonds of the floral world. They have pushed their way over the mountain walls of India, they have crowded along the dusty highways of Europe, they have embarked on merchant vessels bound for the New World, no doubt some of them shipped with Columbus on the mere chance of a home.

One wonders at first why so many of our weeds are foreign, but if we recall the natural conditions of this country, the reason is plain. At the coming of the Europeans, from the Atlantic coast to the Valley of the Mississippi, from the St. Lawrence to the Gulf, there was not one dusty sunny roadside on the continent. The native flowers of eastern North America are woodland plants. There had never been any other conditions, therefore none of these native flowers had ever harmonized with a dusty, sunny environment, and when these conditions at length presented themselves, the Europeans were ready for the conditions. They were prepared to thrive in drought, flourish in neglect, and hold their own against warfare and abuse. They came in every bushel of

seed-grain, in every bale of hay which fed the horses in the War of the Revolution, in every fleece of unwashed wool, and in every pound of ballast. Commerce makes the world at one and, like everything else, has the defects of its virtues.

In addition to the one hundred and more herbs that habitually line up along our summer roadsides are a few shrubs, some like the Wild Roses, the Elders, and Blackberries, that along upland paths bloom nearly through July, but there are several that are frankly summer bloomers; the Purple Flowering Raspberry, the Button Ball, the two Spireas, especially the White Spirea, which in the mountains never loses sight of a rod of the roadway, the Potentilla, and, lastly, the Sweet Pepper bush.

Sturdy little plants like the Wintergreen, Bunch Berry, and Partridge Vine come down out of their mountain wilderness, making their shining way in great beds into the open. But this is only for mountain climbers. Ferns are everywhere, but they are another story.

In the last days of August autumn is signalling. She will take over many of the summer composites as her own. She is ready to send forth her cohorts of Goldenrods, Sunflowers, Asters, and Gentians, and she will bring up the rear with the last flowering shrub, the Witch Hazel. She will even allow the seedlings of spring to bloom and flourish under her protecting care.

The roadsides are not less lovely, in truth they are more gorgeous as the pageant of summer melts unconsciously into the glories of autumn.

The books of reference for the botanical descriptions are Gray's "Manual of Botany." 7th edition, and

Britton's "Manual of the Flora of the Northern States and Canada." The photographs are the work of Mr. Carl Krebs, of Cleveland, Mr. Nathan R. Graves, of Rochester, and Mr. Wilson J. Conway, of Milwaukee.

GENERA AND SPECIES

		PAGE
TYPHACEÆ	CAT-TAIL FAMILY	
Typha latifolia	Broad-Leaved Cat-Tail	3
Typha angustifolia	Narrow-Leaved Cat-Tail	5
NAIADACEÆ	PONDWEED FAMILY	
Potamogeton natans	Common Floating Pondweed	6
ALISMACEÆ	WATER PLAINTAIN FAMILY	
Sagittaria latifolia	Broad-Leaved Arrow-Head	8
VALLISNERIACEÆ	TAPE-GRASS FAMILY	
Vallisneria spiralis	Eel-Grass	10
LEMNACEÆ	DUCKWEED FAMILY	
Lemna minor	Duckweed	13
COMMELINACEÆ	SPIDERWORT FAMILY	
Tradescantia Virginiana	Spiderwort	15
PONTEDERIACEÆ	PICKEREL-WEED FAMILY	
Pontederia cordata	Pickerel-Weed	17
LILIACEÆ	LILY FAMILY	
Hemerocallis fulva	Tawny Day-Lily	19
Lilium Canadensis	Meadow Lily	21
Lilium superbum	Turk's-Cap Lily	22
Lilium Philadelphicum	Red Lily	24
IRIDACEÆ	IRIS FAMILY	
Iris versicolor	Blue Flag	26
Belamcanda Chinensis	Blackberry-Lily	29
SAURURACEÆ	LIZARD'S-TAIL FAMILY	
Saururus cernuus	Lizard's-Tail	31

		PAGE
URTICACEÆ	NETTLE FAMILY	
Urtica dioica	Stinging Nettle	33
POLYGONACEÆ	BUCKWHEAT FAMILY	
Polygonum Pennsylvanicum	Pink Knotweed	36
Polygonum lapathifolium	Large White Knotweed	37
Polygonum persicaria	Common Smartweed	37
Polygonum aviculare	Knotgrass	38
Polygonum scandens	Climbing False Buckwheat	38
Polygonum cilinode	Fringed Black Bindweed	40
Rumex crispus	Curled Dock	40
Rumex obtusefolius	Broad-Leaved Dock	42
CHENOPODIACEÆ	GOOSEFOOT FAMILY	
Chenopodium album	Lamb's-Quarters	44
PHYTOLACCACEÆ	POKEWEED FAMILY	
Phytolacca decandra	Pokeweed	46
CARYOPHYLLACEÆ	PINK FAMILY	
Lychnis alba	White Campion	48
Silene latifolia	Bladder Campion	50
Saponaria officinalis	Bouncing-Bet	52
NYMPHÆACEÆ	WATER-LILY FAMILY	
Nymphæa odorata	White Water-Lily	55
Nuphar advena	Spatter-Dock	58
Nelumbo lutea	American Lotus	60
RANUNCULACEÆ	CROWFOOT FAMILY	
Clematis Virginiana	Clematis	62
Cimcifuga racemosa	Cimcifuga	65
Ranunculus acris	Buttercup	66
Thalictrum polygamum	Tall Meadow-Rue	68
Thalictrum purpurascens	Purple Meadow-Rue	70
CRUCIFERÆ	MUSTARD FAMILY	
Brassica nigra	Black Mustard	71
Brassica campestris	Wild Turnip	74

		PAGE
CRASSULACEÆ	ORPINE FAMILY	
Sedum telephium	Live-Forever	75
ROSACEÆ	ROSE FAMILY	
Dalibarda repens	Dalibarda	77
Agrimonia hirsuta	Tall Agrimony	78
Potentilla tridentata	Three-Toothed White Cinquefoil	79
Sanguisorba Canadensis	American Great Burnet	81
CÆSALPINIACEÆ	SENNA FAMILY	
Cassia chamæcrista	Partridge-Pea	83
PAPILIONACEÆ	PEA FAMILY	
Genista tinctoria	Woadwaxen	85
Trifolium pratensis	Red Clover	87
Trifolium repens	White Clover	88
Trifolium hybridum	Alsike Clover	89
Trifolium aureum	Yellow Clover	89
Trifolium arvense	Rabbit-Foot Clover	90
Melilotus alba	White Sweet Clover	92
Melilotus officinalis	Yellow Sweet Clover	93
Coronilla varia	Coronilla	93
Desmodium Canadensis	Showy Tick-Trefoil	94
Desmodium nudiflorum	Naked-Stemmed Tick-Trefoil	96
Lespedeza violacea	Bush-Clover	96
Lespedeza angustifolia	Narrow-Leaved Bush-Clover	97
Apios tuberosa	Groundnut	98
GERANIACEÆ	GERANIUM FAMILY	
Geranium robertianum	Herb Robert	100
POLYGALACEÆ	MILKWORT FAMILY	
Polygala sanguinea	Rose Polygala	103
ANACARDIACEÆ	SUMAC FAMILY	
Rhus radicans	Climbing Poison Ivy	104
Rhus microcarpa	Running Poison Ivy	104
Rhus toxicodendron	Poison Ivy	104

		PAGE
BALSAMINACEÆ	JEWEL-WEED FAMILY	
Impatiens fulva	Golden Jewel-Weed . .	106
Impatiens pallida . . .	Pale Jewel-Weed . . .	108
VITACEÆ	GRAPE FAMILY	
Vitis vulpina	Fox-Grape	109
Vitis labrusca	Northern Fox-Grape . .	110
Parthenocissus quinquefolia	Virginia Creeper . . .	112
MALVACEÆ	MALLOW FAMILY	
Hibiscus moscheutos . .	Swamp Rose-Mallow . .	114
Althæa officinalis . . .	Marshmallow . . .	115
Malva rotundifolia . . .	Running Mallow . . .	116
Malva moschata	Muskmallow	118
HYPERICACEÆ	ST. JOHN'S-WORT FAMILY	
Hypericum perforatum . .	Common St. John's-Wort	120
LYTHRACEÆ	LOOSESTRIFE FAMILY	
Lythrum salicaria . . .	Purple Loosestrife . .	124
MELASTOMACEÆ	MEADOW-BEAUTY FAMILY	
Rhexia Virginica . . .	Meadow-Beauty . . .	126
ONAGRACEÆ	EVENING-PRIMROSE FAMILY	
Epilobium angustifolium .	Great Willow-Herb . .	128
Epilobium coloratum . .	Small Willow-Herb . .	130
Onagra biennis	Evening-Primrose . .	131
UMBELLIFERÆ	CARROT FAMILY	
Heracleum lanatum . . .	Cow-Parsnip	134
Pastinaca sativa	Wild Parsnip	135
Sium cicutæfolium . . .	Hemlock Water-Parsnip .	136
Conium maculatum . . .	Poison-Hemlock . . .	138
Cicuta maculata	Water-Hemlock . . .	139
Daucus carota	Wild Carrot	140
ERICACEÆ	HEATH FAMILY	
Gaultheria procumbens . .	Wintergreen Checkerberry	142

		PAGE
PRIMULACEÆ	PRIMROSE FAMILY	
Lysimachia terrestris	Bulb-Bearing Loosestrife	144
Lysimachia quadrifolia	Whorled Loosestrife	146
Lysimachia nummularia	Creeping Charley	146
PLUMBAGINACEÆ	PLUMBAGO FAMILY	
Statice limonium	Marsh-Rosemary	147
GENTIANACEÆ	GENTIAN FAMILY	
Sabbatia stellaris	Sabbatia	149
APOCYNACEÆ	DOGBANE FAMILY	
Apocynum androsæmifolium	Spreading Dogbane	152
Apocynum cannabrium	Indian Hemp	155
ASCLEPIADACEÆ	MILKWEED FAMILY	
Asclepias Syriaca	Common Milkweed	157
Asclepias tuberosa	Butterfly-Weed	161
Asclepias incarnata	Swamp Milkweed	161
Asclepias quadrifolia	Four-Leaved Milkweed	161
CONVOLVULACEÆ	MORNING-GLORY FAMILY	
Convolvulus sepium	Hedge Bindweed	163
CUSCUTACEÆ	DODDER FAMILY	
Cuscuta gronovii	Common Dodder	166
BORAGINACEÆ	BORAGE FAMILY	
Cynoglossum officinale	Hound's-Tongue	169
Echium vulgare	Viper's-Bugloss	170
VERBENACEÆ	VERVAIN FAMILY	
Verbena hastata	Blue Vervain	173
LABIATÆ	MINT FAMILY	
Scutellaria integrifolia	Skullcap	176
Nepeta cataria	Catnip	177
Prunella vulgaris	Self-Heal	179
Leonurus cardiaca	Motherwort	181
Monarda didyma	Bee-Balm	183
Monarda fistulosa	Wild Burgamot	186
Mentha spicata	Spearmint	187
Mentha piperita	Peppermint	188

		PAGE
SOLANACEÆ	NIGHTSHADE FAMILY	
Solanum dulcamara	Nightshade	190
Datura stramonium	Datura Jimson-Weed	191
SCROPHULARIACEÆ	FIGWORT FAMILY	
Verbascum Thapsus	Common Mullein	194
Verbascum blattaria	Moth Mullein	196
Chelone glabra	Turtle-Head	198
Mimulus ringens	Monkey-Flower	200
Linaria vulgaris	Butter-and-Eggs	201
Dasystoma flava	Yellow Gerardia	204
Penstemon digitalis	Beard-Tongue	205
PLANTAGINACEÆ	PLANTAIN FAMILY	
Plantago major	Common Plantain	208
Plantago lanceolata	Ribwort	209
RUBIACEÆ	MADDER FAMILY	
Mitchella repens	Partridge Berry	211
DIPSACACEÆ	TEASEL FAMILY	
Dipsacus sylvestris	Wild Teasel	214
Dipsacus fullonum	Fuller's Teasel	216
CUCURBITACEÆ	GOURD FAMILY	
Echinocystis lobata	Wild Cucumber	218
CAMPANULACEÆ	BELLFLOWER FAMILY	
Campanula rapunculoides	Creeping Bellflower	221
Campanula rotundifolia	Harebell	222
Lobelia cardinalis	Cardinal Flower	223
Lobelia syphilitica	Blue Lobelia	225
COMPOSITÆ	COMPOSITE FAMILY	
Cichorium intybus	Chicory	228
Sonchus oleraceus	Common Sow-Thistle	230
Leontodon autumnale	Fall Dandelion	232
Lactuca scariola	Prickly Lettuce	233
Lactuca Canadensis	Tall Lettuce	236
Lactuca hirsuta	Red Wood-Lettuce	237
Erigeron annuus	Daisy Fleabane	238

		PAGE
Hieracium aurantiacum	Devil's Paint Brush	240
Inula helenium	Elecampane	242
Anthemis cotula	Mayweed	243
Chrysanthemum leucanthemum	Ox-Eye Daisy	245
Rudbeckia hirta	Black-Eyed Susan	247
Rudbeckia laciniata	Tall Rudbeckia	248
Achillea millefolium	Yarrow	249
Carduus spinosissimus	Yellow Thistle	252
Carduus odoratus	Pasture Thistle	253
Carduus lanceolatus	Roadside Thistle	254
Carduus arvensis	Canada Thistle	257
Centaurea calcitrapa	Purple Star-Thistle	259
Eupatorium purpureum	Purple Eupatorium	260
Eupatorium perfoliatum	Boneset Thoroughwort	262
Vernonia noveboracensis	Iron-Weed	263
Tanacetum vulgare	Tansy	264
Anaphalis margaritacea	Pearly Everlasting	266
Gnaphalium obtusifolium	Fragrant Everlasting	268
Gnaphalium decurrens	Clammy Everlasting	269
Arctium minus	Common Burdock	270
Solidago	Goldenrod	272
Helianthus	Sunflower	273
Aster	Aster	274

ILLUSTRATIONS

COLOR PLATES

Swamp Rose-Mallow . . . . . *Frontispiece*

FACING PAGE

Meadow Lily 22

Pokeweed in Fruit, Leaf of Virginia Creeper, Leaf of Poison Ivy 46

Bouncing-Bet 52

Red, White, Alsike and Yellow Clover 86

Common Mullein 194

Evening-Primrose, Chicory 228

Ox-Eye Daisy, Black-Eyed Susan, Mayweed 246

HALF–TONE PLATES

FACING PAGE

Cat-Tail at Home 4

Broad-Leaved Arrow-Head at Home 6

Tawny Day-Lily 20

Turk's-Cap Lily 24

Curled Dock at Home 40

White Water-Lily at Home 56

American Lotus at Home 60

Cimcifuga at Home 66

Wild Turnip 74

Poison Ivy Climbing Tree-Trunks 104

Cow-Parsnip 134

Wild Parsnip 136

Wild Carrot in Possession of a Field 140

Common Milkweed 158

Viper's-Bugloss 170

Wild Burgamot 186

ILLUSTRATIONS

FACING PAGE

Datura 192
Wild Teasel 214
Cardinal Flower 224
Prickly Lettuce 234
Purple Eupatorium at Home 260
Boneset 262
Common Burdock 270

ILLUSTRATIONS IN TEXT

PAGE

Common Floating Pondweed 7
Eel-Grass Submerged 11
Duckmeat 13
Spiderwort 16
Pickerel-Weed 17
Blue Flag 27
Fruit of Blackberry-Lily 29
Lizard's-Tail 31
Stinging Nettle 34
Pink Knotweed 37
Climbing False Buckwheat 39
Leaf of Common Dock 42
Lamb's-Quarters 45
White Campion 49
Bladder Campion 51
Yellow Pond-Lily 59
Clematis 63
Buttercup 67
Spray of Tall Meadow-Rue 69
Black Mustard 72
Leaf of Live-Forever 75
Dalibarda 77
Tall Agrimony 78
Three-Toothed White Cinquefoil 80
Partridge-Pea 83
Woadwaxen 85

PAGE

Yellow Clover 90
Rabbit-Foot Clover 91
Sweet Clover 92
Coronilla 93
Tick-Trefoil 95
Bush-Clovers 97
Leaf of Apios 99
Herb Robert 101
Golden Jewel-Weed 107
Riverside Grape 110
Running Mallow 117
Muskmallow 119
Common St. John's-Wort 121
Purple Loosestrife 125
Meadow-Beauty 127
Great Willow-Herb 129
Evening-Primrose 132
Hemlock Water-Parsnip 137
Leaf of Water-Hemlock 139
Wintergreen 142
Bulb-Bearing Loosestrife 145
Money 146
Marsh-Rosemary 148
Sabbatia 150
Spreading Dogbane 153
Milkweed Flower 159
Wild Morning-Glory 164
Common Dodder in fruit 167
Blue Vervain 174
Skullcap 176
Leaf of Catnip 178
Self-Heal 180
Motherwort 182
Bee-Balm 185
Spearmint 187
Nightshade 190

PAGE

Moth Mullein 197
Turtle-Head 199
Monkey-Flower 200
Butter-and-Eggs 203
Yellow Gerardia 204
Beard-Tongue 206
Common Plantain 209
Ribbed Plantain 209
Partridge Berry 212
Wild Cucumber 219
Creeping Bellflower 221
Harebell 223
Blue Lobelia 226
Common Sow-Thistle 231
Leaf and Flower of Tall Lettuce 236
Leaf and Flower of Red Wood-Lettuce 237
Daisy Fleabane 239
Devil's Paint Brush 241
Elecampane 242
Yarrow 250
Yellow Thistle 253
Roadside Thistle 255
Canada Thistle 258
Purple Star-Thistle 259
Iron-Weed 263
Tansy 265
Pearly Everlasting 267
Fragrant Everlasting 269

THE WAYSIDE FLOWERS OF SUMMER

TYPHÀCEÆ—CAT-TAIL FAMILY

BROAD-LEAVED CAT-TAIL

Tŷpha latifôlia

Typha, Greek, meaning fen or bog.

A little nearer the shore than the floating lilies one often finds a circle of Cat-tails standing at the edge of pool or lake. Native to North America, Europe, and Asia. The plant is easily recognized before bloom by its stemless ribbon-like leaves and later by the conspicuous, dark brown cat-tail spikes of blossoms and later of ripened fruit.

Rootstalks.—Creeping; roots fibrous, capable of threading soft, marshy ground.

Stems.—Stout, smooth, erect, terete, three to eight feet high.

Leaves.—Linear, flat, sword-shaped, striate, sheathing at the base; half an inch to an inch wide, four to six feet high, usually taller than the flower-stem.

Flowers.—Monœcious, that is, bearing stamens and pistils on the same plant but in different flowers; densely crowded in dark brown, terminal, cylindrical spikes, three to twelve inches long.

The Cat-tail lives where the soil is wet, but not under water all the time. When land is drained or when it is continually under water the Cat-tails die out. They are usually found in marshy zones along lakes and streams, with dry land on one side and water on the other.

The blooming period is early summer and the blossoming spike is a two-story arrangement "as if the tip of Pussy's tail was of a different kind of fur," as indeed it is. The upper part is golden green and seems to be clothed with a fine drooping fringe of yellow which proves to be a mass of crowded anthers with a few attendant hairs. These anthers shed their pollen abundantly and this falls down upon the innumerable pistillate flowers beneath. By late July the stamens have shed all their pollen and shrivelled, they and their hairs have all dropped off, and only a bare brown stem marks the place where they once were. The lower half of the cylindrical spike consists of pistillate florets and they remain intact. It is no light matter to separate the pistillate florets from the plush of the Cat-tail, they are so crowded and embedded in whitish down. They are without either sepal or petal, the ovary is long, the style slender, and the stigma reaches out to the surface of the velvet cylinder. It is easier to find the seed, this being very like the flower except that it is a little larger and browner; it is, in fact, the ripened pistil.

In the wet ditch by the wayside, at the edge of the lake or pond, at the point where land and water meet, one finds in midsummer groups of Cat-tails anywhere and everywhere throughout the Northern States.

The leaves of the Cat-tail plant are all of the same general shape but vary in length. The free part is long and narrow and flat with a tapering rounded tip; the lower part clasps the stem as well as it can. The leaves generally stand higher than the stiff stem of blossoms or fruit, and a plantation of seedlings sways in the breeze like a field of grain. These leaves having

Cat-tail at Home. *Typha latifolia*

reached full size and maturity have a commercial value for filling the seams of casks and barrels and are cut and cured for that purpose.

When one cuts the spike across, the most one sees is a thick mass of soft brownish hairs, black at the tips and paler toward the inner central stalk. When the seeds are mature the Cat-tail down puffs out from the stem. There seems to be an elastic spring to the fine threads of the down, for when relieved of pressure they open into tiny parachutes to carry the seed afar. When birds or the wind have made an opening, the fluffy mass pours forth; one often sees beds of Cat-tail stalks which have lost all their trim cylindrical form and are shapeless masses of brownish down. A dwarf species, *Typha angustifolia*, is often found growing with the larger form.

NAIADÀCEÆ—PONDWEED FAMILY

COMMON FLOATING PONDWEED

Potamogèton nàtans

Potamogeton, Greek, in allusion to the aquatic habit of the genus.

One of the commonest floating plants upon the quiet waters of ponds and streams throughout the Northern States. July–August.

Stem.—Twenty to forty inches long, round, hollow, brown, simple or sparingly branched.

Leaves.—Floating, thick, elliptic, ovate or oval, three to four inches long, one to two inches wide, pointed at apex, rounded or slightly heart-shaped at base, margin entire or wavy; midvein conspicuous; upper surface dry, green; under surface reddish. Submerged leaves are narrowly linear and perish early.

Flowers.—Small, pink, borne in a dense spike about three-fourths to an inch long, and one-fourth to three-eighths thick. Peduncle terminal, axillary, mucilaginous, thick as the stem, one to two inches long.

Perianth Segments.—Four, concave, valvate, fitting closely together; really developed connectives at the back of the anthers.

Stamens.—Four.

Pistil.—Of four carpels which develop into four pitted nutlets.

Often in midsummer upon the surface of quiet water, rising and falling with the ripple of the waves or the flow of the stream, spreads a group of oblong, rather

Broad-leaved Arrow-head at Home. *Sagittària variábilis*

shining green leaves, in a somewhat circular, irregular form. The leaves are friendly but not crowded, they give and take at the tension of sundry submerged brown stems that anchor them and at the same time give them free play. In early August one finds in

Common Floating Pondweed. *Potamogèton nàtans*

most groups, few or several dense bunches of tiny pink flowers, on thick shining peduncles half under water.

The roots, like those of most water plants, have less to do with the nourishment of the plant than the roots of land plants. Their essential function seems to be to hold the plant in place. This is one of the best known Pondweeds, but the books report over forty representatives in our northern waters.

ALISMÀCEÆ—WATER PLANTAIN FAMILY

BROAD-LEAVED ARROW-HEAD

Sagittària variábilis. Sagittària latifòlia

Sagittaria, referring to the arrow-shaped leaves of some species.

Perennial. Native. A very common and decorative aquatic plant standing in shallow water or in mud, bearing loose spikes of white flowers from a bed of arrow-shaped leaves. A plant of continental distribution. July–September.

Roots.—Fibrous, sending out stolons.

Leaves.—Arrow-headed or halberd-shaped, broad or narrow, on long petioles, exceedingly variable.

Flowers. Monœcious or dicœcious; white, an inch to an inch and a half across, in three-bracted whorls of three, borne near the summit of a leafless scape six inches to three feet high.

Calyx.—Sepals three, persistent.

Corolla.—Petals three, rounded, spreading.

Stamens.—Variable, inserted on the convex receptacle; yellow in the upper flowers, often imperfect or absent in the lower pistillate flowers.

Pistils.—Numerous in the pistillate flowers; sometimes imperfect in the staminate flowers; stigmas small, persistent.

Fruit.—Akenes, densely aggregated into globose heads, compressed.

Pollinated by bees and flies.

The Arrow-head stands by the waterside, sometimes in single rank along the shore, again in close beds; sometimes it apparently wades out into midstream, but whether in shallow or in depth takes wonderful care to keep its head above water; the firm, erect petioles hold up each leaf as triumphantly as a stork standing upon one leg.

Among these brilliant pointed leaves, in midsummer are leafless stems bearing whorls of white flowers in groups of threes. Some of these flowers have bright yellow centres; these are the staminate flowers; others have a tiny green ball for centre, these are the pistillate flowers. Sometimes these little balls lose their petals; they are the pistillate flowers reduced to their lowest terms.

The leaves vary as well as the flowers. The blade is sometimes a broad arrow-head; again it is so narrow that it seems a mere skeleton of a leaf. This narrow form is now regarded as a separate species.

VALLISNERIÀCEÆ—TAPE-GRASS FAMILY

EEL-GRASS. TAPE-GRASS

Vallisnèria spirâlis

Named for Antonio Vallisneri, 1661–1730, an Italian naturalist.

A submerged perennial, rooted in sand or mud, with long grass-like, floating leaves; common in sluggish streams and shallow lakes; well known because it twists its long, tough leaves around oar-blades and boat-rudders. Of wide distribution both in America and in Europe. August–September.

Leaves.—Three to six feet long, thin, narrowly linear, three to five-nerved, obtuse, sometimes serrate near the apex.

Flowers.—Dicœcious, that is, the stamens and pistils grow on separate plants. The staminate flowers develop under water, surrounded by a spathe and borne on a short scape. They are clustered on a short receptacle; perianth three-parted; stamens generally two. The bud of staminate flowers separates from the scape at the time of flowering, rises to the surface and expands there, so that the stamens float with the drift of the surface water.

The pistillate flowers are borne upon a long, slender scape that curves more or less spirally; the spathe is half an inch to an inch long, enclosing a single white flower. The perianth tube is three-lobed. Ovary is as long as the spathe; stigmas three.

After the stigma receives the pollen from the floating

staminate flowers, the long flower-stem contracts spirally, carrying the seed-vessel down to the water floor.

Fruit.—Of united carpels; elongated, cylindrical, ripening under water.

Of all plants that dwell by the water or beneath it Eel-Grass may claim to have achieved one of the most original strokes of nature in the mating of its blossoms. It is the law of the floral world that the pollen seeks the stigma; it may journey on the body of an insect, it may ride on the wings of the wind, gravity may carry it, but Eel-Grass snaps the staminate flower from its stem and sends it afloat upon the surface of the water to seek its mate.

Eel-Grass Submerged. *Vallisnèria spirâlis*

"The pistillate flower is borne on a very long stalk which rises through the water corkscrew fashion in a beautiful and symmetrical spiral.

"The stamen-bearing flowers grow crowded together on a cone-shaped head borne on a very short stalk and develop under water close to the bottom of the lake or pond.

"When the staminate flower-buds are ready to burst the cone-shaped cluster breaks from its moorings and rises to the surface. Here in the sunshine the flowers expand, the anthers open, and the pollen is shed. About the same time the stalk of the pistillate flower grows much longer and straightens itself. The flower is now, as it were, tethered by a long line and sways over a large circuit at the impulse of the wind, or the rippling waves. Soon it comes in contact with the scattered pollen and receives upon its stigma some of the pollen grains."

After pollination is accomplished the long stem coils itself up and so draws the fertilized flower-head down into the cool depths of the water and there the fruit is matured.

Rowing upon the inland lakes of the north in August one often sees near the shore numbers of the small white blossoms, consisting of a slender ovary about an inch long crowned with a white corolla of three petals. The stem is long and yielding and the blossoms come and go and sway and yield with the wave of the wind or the passing boat, but always just awash. Surrounding them is a gathering of white specks at times so abundant as to suggest the tiny bubbles of a spent wave. Under a lens each white speck resolves itself into two tiny stamens laden with pollen in a three-pointed boat seeking their destiny on an unknown sea.

Because of the tendency of Eel-Grass to wrap itself about oar, rudder, or propeller, the plant is anathema to all boatmen on shallow waters.

This is the Wild Celery of Chesapeake Bay and a favorite food of the canvasback duck.

LEMNÀCEÆ—DUCKWEED FAMILY

DUCKWEED. DUCKMEAT

Lêmna mìnor

Lemna, an ancient Greek name of obscure meaning.

A minute, floating, aquatic plant, abundant in small ponds and the backwater of streams.

Plant-body.—Consists of a disk-shaped thallus (leaf) about an eighth of an inch in diameter, circular, ovate or obovate, which is loosely cellular, pale green, and bears one or two delicate white roots attached to the under surface. Latest authorities regard this floating disk as a leaf-like stem.

Flowers. — Monœcious, minute, borne on the edge or upper surface of the plant, and consist of a single stamen or a single stigma.

Duckmeat. *Lêmna mìnor*

In the slack water of a slow-flowing stream in the sheltered, quiet coves of lake or pond one often finds in midsummer an area of water with an absolutely green cover. Investigation shows that this cover is made of innumerable floating plants, more or less circular disks varying in size from a pin-head to a quarter of an inch in diameter. They multiply by sending out more disks; these usually separate and set

up life for themselves, though often two or three adhere together.

Each leaf possesses one or two threadlike white roots which extend downward an inch or more and apparently balance and steady the plant as well as feed it.

Curiously enough this minute floating creature which represents an entire plant in a single leaf, produces a real flower. This flower consists of a single stamen or a pistil with an ovary which contains two ovules. These flowers are very difficult to find.

The plant has the common name of Duckweed and Duckmeat, due probably to the fact that it rides the water so easily and its back is never wet. The individuals crowd upon each other to such an extent that it is difficult to see the water beneath them. The plant requires quiet water, but the water must be pure and clean.

The Duckweed Family comprises the smallest of flowering plants and contains four genera of about thirty species, widely distributed over the world.

COMMELINÀCEÆ—SPIDERWORT FAMILY

SPIDERWORT

Tradescántia Virginiàna

Named in honor of John Tradescant, gardener to Charles I. of England. Wort is the old Saxon name for plant.

A native perennial, transferred to the garden. Found on the border of moist thickets, also in dry, sandy places. New York to the Dakotas, southward to Virginia and Kentucky. July–September.

Stem.—One to three feet high, erect, leafy, mucilaginous.

Leaves.—Alternate, parallel-veined, lance-linear, keeled, ten to fourteen inches long, sheathing at the base.

Flowers.—Showy, violet-blue, rarely white; borne in many-flowered terminal or axillary clusters which are subtended by leaf-like bracts; pedicels slender, with long white hairs.

Sepals.—Three, ovate, acute, or obtuse, hairy.

Petals.—Three, orbicular, alternate with the sepals, blue, sometimes white.

Stamens.—Six, showy; filaments violet, bearded; anthers brilliant orange.

Pistil—Ovary oblong, three-celled; style threadlike; stigma capitate.

Fruit.—Capsule three-celled, several-seeded.

The Spiderwort is rather an unusual type of flower. The blossoms are at the summit of what looks like an

Iris stem; usually two or three are open but more drooping buds are clustered between long, blade-like bracts. They last but for a day. The rich blue

Spiderwort. *Tradescántia Virginiàna*

petals, the brilliant orange anthers set upon a cluster of blue-bearded filaments, and the dark green sepals and leaves, form a pleasing combination of color. The plants are robust, strong-growing, and form dense clumps, which are often found along the roadway in the Middle West.

PONTEDERIÀCEÆ—PICKEREL-WEED FAMILY

PICKEREL-WEED

Pontedèria cordàta

Named in honor of Guilio Pontedera, professor of botany in Padua, 1688–1757.

One of the big, perennial bog-plants standing in shallow water along the borders of ponds and streams; bearing ragged spikes of blue flowers from June to October. Nova Scotia to Minnesota, south to the Gulf States.

Pickerel-weed. *Pontedèria cordàta*

Stem.—Rather stout, two to three feet high, one-leaved, with several, sheathing, bract-like leaves at the base.

Leaves.—Thick, tough, leathery, with many parallel veins, ovate, cordate-sagittate, margin entire, apex obtuse; basal lobes obtuse, often with long narrow appendages on the sheathing petiole; the basal leaves long-petioled.

Flowers.—Blue, numerous, borne on a clumsy terminal spike, which proceeds from a spathe that is soon outgrown, trimorphous. Spadix and inflorescence glandular, hairy.

Perianth.—Funnel-shaped, two-lipped, tube slightly curved;

upper lip of three ovate lobes, the middle lobe longest; the lower lip of three spreading lobes.

Stamens.—Six, bright blue, borne at unequal distances upon the perianth tube; three of them opposite the lower lip; the others opposite the upper lip.

Pistil.—Ovary three-celled, two of the cells abortive and empty.

Fruit.—A one-seeded capsule enclosed in the base of the perianth.

The Pickerel-weed dwells by choice at the margin of shallow, clear-flowing northern streams where trout and pickerel disport themselves in the clear cool water. The plant still stands in its ancient home, but of late years has come into the water-gardens as well and made the acquaintance of civilization.

The stout stalk rises one to four feet from a horizontal rootstock. It bears one solitary, large, heart-shaped leaf and is crowned with a showy spike of bright blue ephemeral blossoms—blue from tip to toe, perianth blue, filaments, anthers, and style, all blue—with but one tiny dash of yellow within each open cup.

LILIÀCEÆ—LILY FAMILY

TAWNY DAY-LILY

Hemerocállis fúlva

Hemerocallis, Greek, from *hemera*, day, and *kallos*, beauty—beautiful for a day.

A tall, perennial, Lily-like plant appearing along the roadside in beds and solid masses of sword-like leaves, finally surmounted by clusters of uplooking, dull-orange Lilies, borne on slender, leafless stems. An escape from gardens. Native of Europe and Asia. June–August.

Root.—Perennial, fleshy, fibrous.

Leaves.—Basal, sword-like, linear, keeled, smooth; margin entire, apex acute; eighteen to twenty-four inches long.

Flowers.—Perianth Lily-like, funnel-shaped, six-lobed; lobes oblong or spatulate, acute at apex, much longer than the cylindric tube, tawny orange; enduring for a day.

Stamens.—Six, inserted at the summit of the perianth tube; filaments long and slender, anthers linear-oblong.

Pistil.—Ovary oblong, three-celled; style long and slender, declined; stigma club-shaped.

Fruit.—Capsule, three-celled, many-seeded.

Pollinated by bees and butterflies. Nectar-bearing.

This plant is not misnamed; its flowers are beautiful and live but for a day, yet as the succession is continuous the flowering period is extended. The plant appears by the roadsides in large beds of closely growing sword-like leaves, yellow-green, conspicuous

in early spring. By the last of June the leafy bed is sending up tall, slender, leafless scapes or flower-stems surmounted by clusters of oblong buds, and by July the flowers begin to open. They seem to be Lilies and yet they are not Lilies. For at base of each Lily-like blossom is a slender tube and the six petals are clearly expanded and enlarged segments of that tube. Moreover, the petals show differences among themselves, so we call the apparent corolla a perianth with three sepaloid and three petaloid divisions.

The books call the blossom tawny orange and as you look down into the cup you see a heart of dull yellow which deepens at the point where the segments curve, and lightens again as the color runs to the tips. The result is dull orange on a base of yellow. The sepaloid segments are readily distinguished by shape as well as by position. The long orange filaments bear anthers heavily loaded with pollen and the style is a slender yellow wand four inches long, extending far beyond the pollen zone. Evidently cross-fertilization is desired. What is to be done must be done quickly, for opening under the stimulus of the rising sun the blossom dies with his departing rays; and the flower erst so lovely becomes a mass of decay on the parent stem. These tawny lovers of the sun live their own lives, freed both from the protection and domination of man. They gather at the roadside; you find them in the tangle with the Milkweeds and the Teasel; they border the meadows; they mass themselves in old dooryards; they are beautiful, wild, and free. Gardeners recommend them for planting among shrubbery, doubtless because of their ability to take care of themselves.

Tawny Day Lily. *Hemerocállis fúlva*

MEADOW LILY. FIELD LILY. CANADA LILY

Lilium Canadense

One of our most beautiful native plants, appearing in low meadows. From Nova Scotia, Ontario, and Minnesota south to Georgia and Alabama. June–August.

Bulb.—Composed of many narrow, fleshy, white scales.

Stem.—Slender, leafy, two to five feet high.

Leaves.—Either in whorls of four to ten, or alternate; lanceolate, two to six inches long, three-veined, margins and veins roughened; margin entire, apex acute or acuminate, sessile.

Flowers.—Nodding bells, yellow or orange with deeper tones and thickly spotted with dark reddish brown; borne on long slender stems which spring from the summit of the central stalk.

Perianth.—Of six sepal-petals; each division, two to two and a half inches long, yellow or orange-spotted below, recurved or spreading, with a nectar-bearing groove at its base.

Stamens.—Six, sitting around the ovary; filaments long, protruding; anthers linear, versatile, opening longitudinally; pollen abundant.

Pistil.—Ovary three-celled; style long, somewhat club-shaped above; stigma three-lobed.

Fruit.—Oblong, erect capsule, filled with shining seeds.

Pollinated by flies and bees. Nectar-bearing.

"When the tangled cobweb pulls
The cornflower's cup awry,—
And the lilies tall lean over the wall
To bow to the butterfly—
It is July."

"Consider the lilies of the field how they grow; they toil not, neither do they spin: yet I say unto you that even Solomon in all his glory was not arrayed like one of these."

Matthew vi, 28–29.

This is the common Lily of the north, found abundantly in alluvial meadows, nodding among the tall grasses and often going down with its companions under the advance of the mowing-machine. The stem ordinarily rises to the height of three feet and bears several whorls of bright green, lanceolate leaves. At the summit it divides into several flower-stems and each bears a delicate pendulous bell, dull buff or dull orange without, and orange or pale yellow within, freckled with reddish brown spots. It fails of the glowing color of the Wood Lily but it bears its blossoms with an incomparable grace and possesses a charm unsurpassed by any Lily of the garden.

Purely an American plant, the literature of the ages filled with the praise of the Lily knows nothing of its charm and beauty. The Lily of the New Testament we are told was not a Lily, perhaps it was an Amaryllis, but the words are true nevertheless—not even Solomon in all his glory could compete in grace and beauty with our wildling flower.

TURK'S-CAP LILY

Lĭlium superbum

A superb Lily, growing in moist meadows and marshes, bearing bells more recurved than those of the Meadow Lily and usually more of them on the stem. Maine, Ontario, and Minnesota, south to North Carolina and Tennessee. July–August.

Bulb.—Globose, covered with thick, white, ovate scales.

Leaves.—Whorled or alternate, lanceolate, sessile, entire, tapering toward apex and base, three-ribbed.

Meadow-Lily. *Lílium Canadénse*

Flowers.—Lily-bells, varying from orange to yellow, borne on long, slender, spreading peduncles from the summit of the flowering stem and often numbering twenty or more in bloom at one time. The perianth segments are strongly recurved.

Stamens.—Six, long, pale green, with large brown anthers.

Pistil.—Ovary three-celled; style long; stigma three-lobed.

Fruit.—Oblong capsule, containing many seeds.

Pollinated by flies and bees. Nectar-bearing.

The Turk's-Cap is our finest native Lily, sometimes confused with the Meadow Lily which it resembles but which it surpasses. The blossom at maturity is not bell-shaped—it opens much farther, the six sepal-petals curve so far backward beyond the middle as to expose the stamens nearly their entire length, so that with a little imagination it may be a turban. As in all our Lilies, nectar is secreted in a groove at the base of each of the petals and the inner surface is sprinkled with bright dots and lines, all pathfinders to lead the bees to the sweets.

A blooming panicle, a living candelabrum of many arms, each bearing a Lily with turned-back petals dancing in the sunlight under a summer sky, is a gorgeous vision, which like Wordsworth's Daffodils may be reproduced when,

> "In vacant or in pensive mood,
> They flash upon that inward eye
> Which is the bliss of solitude."

The plant's beauty often proves its destruction; it seems so difficult for many of us to "Love the Wood Rose and leave it on its stalk." If the impulse is too

strong within us and we cut the stem, we may indeed shoulder our gorgeous booty and bear it away, but to another sense a brightness has passed from the landscape and a shadow has come across the blue sky.

RED LILY. WOOD LILY

Lĭlium Philadĕlphicum

The only native Lily of the north whose bells are not recurved. Prefers dry or sandy ground, found in upland meadows, dry woods, and thicket borders. Maine to Ontario, south to North Carolina and Virginia. June–August.

Bulb.—Of narrow, jointed, fleshy scales.

Stem.—One to three feet high, leafy above.

Leaves.—In whorls of three to eight at regular intervals along the stalk, sometimes a few are single and alternate. Lanceolate, smooth, acute at base and apex, rough-margined, sessile, two to four inches long.

Flowers.—One to five erect, reddish orange lily-bells, borne at the summit of the stalk on separate stems. The neck of each flower-bell is distinctly opened by the sudden narrowing of the lower part of each perianth segment.

Perianth.—Of six segments, each segment narrowed at base and broadened toward the end which tapers to a blunt tip. On the upper parts of the segments the coloring becomes more intense and some distance from the tips is spotted with dark purple and tinged with yellow.

Stamens.—Six, inserted, around the ovary; filaments long, slender, pink; anthers versatile, reddish brown; anther-sacs opening lengthwise, pollen abundant.

Fruit.—Capsule obovoid; seeds many.

Pollinated by bees. Nectar-bearing.

Turk's-Cap Lily. *Lĭlium supĕrbum*

The cups of the Wood Lily differ very materially from those of the Meadow Lily. To begin with they stand erect, one to three at the top of the stem; in color they are each a blaze of scarlet blurred and dotted with gold. The neck of each flower-bell is distinctly opened by the sudden narrowing of the lower part of each of the six, separate, flaring, sepal-petals into slender almost stem-like bases. Each of these broadens decidedly toward the end and finally tapers to a blunt tip. Within, on the upper half of the petals the color becomes intense, below it is paler. The six long, pink stamens have dark brown anthers and the long style has a brown stigma. This is the only native Lily of the north whose bells are not recurved; its cup is open to the sun and one finds it on midsummer days standing erect, a blaze of orange and gold amid the grass of upland meadows or glowing like a torch in the shadow of the hill forest—a Lily to its heart's core.

IRIDÀCEÆ—IRIS FAMILY

BLUE FLAG. BLUE IRIS. FLEUR-DE-LIS

Iris versîcolor

Iris, Greek, rainbow; in recognition of the variegated flowers.

Perennial. Native. A very ornamental plant found in wet meadows and swamps. Newfoundland to Manitoba, south to Florida and Kansas. June–August.

Rootstock.—Thick, fleshy, horizontal.

Leaves.—Long, narrow, pointed, sword-shaped.

Flowers.—Violet-blue variegated with yellow, green, and white. Borne on tall erect stems which often branch for the blossoms.

Perianth.—Of six segments; three outer, sepaloid, spatulate, spreading and reflexed; three inner ones, narrow and erect.

Stamens.—Three, inserted at the base of the outer perianth segments.

Pistil.—Ovary three-celled; divisions of the style petal-like arching over the stamens, bearing stigmatic surfaces under their tips.

Fruit.—Capsule, oblong, obscurely three-lobed. Seeds many.

Pollinated by bees. Nectar-bearing.

The structure of an Iris flower is extremely puzzling to an amateur because the parts are so grown together. Ovary, perianth, and style unite to transform the lower part of the flower into a sort of stem and the upper

part of this stem becomes tubular. It then divides into six segments, of which the outer or sepaloid ones have great beauty both of form and color, being broadest toward the rounded tip, spreading and recurvéd. They are violet-blue, with white and yellow markings and dark purple veinings. The three inner or petaloid segments, each on a claw, are much smaller, less spreading, and nearly erect. They are violet-blue with purple veinings.

Blue Flag. *Iris versicolor*

Looking directly into the flower, one fails at first to discover either pistil or stamens; certainly the accustomed yellow heart is wanting. But pistil and stamens are both present though one has taken an unusual form and the other is well hidden. The heart of the blossom which looks like three additional petals is the enlarged and glorified style, divided into three arms which separate and curve outward. These arms are also violet-blue, darker at the tip and paler on the arch. The stigmatic surface is so hidden that one rarely sees it except one searches, placed as it is under the tip of the style-arm. It can be detected by

its slightly shining surface or by the pollen which may chance to adhere to it. From the base of each of the outer perianth segments rises a stamen with a short filament and large anther, closely pressed against the nearest arm of the style. All this careful arrangement looks toward cross-fertilization by means of the bee. The arrangement seems to work well, for the Iris seeds abundantly.

The Iris leaf is erect and without distinction of blade and petiole; the surfaces which stand right and left are alike. A careful examination shows that what appears to be a flat leaf-blade is in fact a leaf-blade folded lengthwise. Toward the tip the folding is complete and the lateral halves are blended, but nearer the base they are more or less distinct and a crevice is there left in which are clasped the flower-stem and the base of the sword-like leaf above it on the opposite side. That which answers to the under side of other leaves is here on the outside. The clusters of leaves at the ground are arranged in what is termed an equitant manner; each leaf by its folding sits astride the leaf just above it.

Ruskin, writing of this flower, says: "The Fleur-de-lys, which is the flower of chivalry has a sword for its leaf and a Lily for its heart. When that young and pious crusader, Louis VII. adopted it for the emblem of his house, spelling was scarcely an exact science and the Fleur-de-Louis soon became corrupted into its present form. Doubtless the royal flower was the white Iris, and as *li* is the Celtic for white, there is room for another theory as to the origin of the name. It is our far more regal-looking, but truly democratic blossom, jostling its fellows in the marshes, that is indeed born in the purple."

About twenty species of Iris are found distributed throughout North America and the name Fleur-de-lis is generally applied to them all.

BLACKBERRY-LILY

Belamcánda Chinénsis. Pardánthus sinensis

A perennial Chinese plant, an escape from old gardens and now found on the roadsides of New England, New York, and farther south. June–August.

Stem.—Three to four feet high, erect, leafy.

Leaves.—Iris-like, equitant, eight to eighteen inches long, about one inch broad.

Flowers.—In a loose terminal cluster, orange, dotted with crimson and purple. The three sepaloid segments of the perianth a trifle longer than the three petaloid.

Stamens.—Three; style slender; stigma three-lobed.

Fruit.—A capsule more than an inch long; the three valves are reflexed and the black, shining seeds cling to the central placenta in a way to suggest a blackberry.

Fruit of Blackberry-Lily. *Belamcánda Chinénsis*

One meets the Blackberry-Lily by the roadside, rarely is it found within the garden gate. There are two reasons for this: the foliage, though of the Iris type, adds nothing to the foliage effect of the garden, and the blossom, though apparently a Lily, is not a Lily, and is, moreover, small, not more than two and a half inches across. These blossoms last but for

a day, not more than two or three are in bloom at one time on a single stem. The color is striking, orange dotted with red, darker in effect though of the same type as the Tiger-Lily. But the petals never achieve the curve which makes the Tiger-Lily so attractive; the flower is always a flat, six-pointed star. The common name is suggested by the ripened capsule; an enlarged central column comes up through the ovary, the outside covering falls away, the round black shining seeds cling fast to the column and form a clever imitation of a ripe and luscious blackberry.

SAURURÀCEÆ—LIZARD'S-TAIL FAMILY

LIZARD'S-TAIL

Saurùrus cérnuus

From *Saurus*, a lizard and *oura*, tail, referring to the appearance of the terminal spike of flowers.

Native, perennial, marsh herb. Making beds in swamps and shallow water. Southern New England to Minnesota and southward. June–August.

Rootstock.—Slender, horizontal.

Stem.—Two to four feet high, jointed, sparingly branched, leafy.

Leaves.—Heart-shaped, palmately ribbed, dark green, thin, on stout petioles which sheathe the stem.

Flowers.—Whitish, small, fragrant, densely crowded on slender spikes four to six inches long and nodding at the tip. Calyx and corolla are wanting; each flower consists only of stamens and pistils and has a small bract at the base.

Stamens.—Six to eight, filaments white and threadlike.

Lizard's-Tail. *Saurùrus cérnuus*

Pistil.—Of three or four carpels united at base.

Fruit.—Capsule separating into three or four carpels.

Pollinated by flies chiefly. Nectar-bearing.

A roadway through a swamp often passes by a plantation of Lizard's-Tail, and in midsummer this is all in bloom forming a whitish mass above the water floor.

The plant is semi-aquatic, growing in beds that apparently are always slipping off the land into the water. What color the dense terminal spike possesses is entirely due to the white filaments of the stamens, for the flowers are destitute of both calyx and corolla.

When a plant gives up both calyx and corolla it is clear that it offers no invitation to insects that must be allured through sight. When such a plant becomes distinctly fragrant, it is evident that it is not the wind whose services it seeks, but insects; and it is also clear that its insect guests are those who do not see very well but whose sense of smell is acute. And so the Lizard's-Tail has come to depend for fertilization upon flies, we may say entirely, for flies can smell much better than they can see.

The curious little turn and twist of the summit of the spike gives the common name to the plant.

URTICÀCEÆ—NETTLE FAMILY

STINGING NETTLE

Urtìca dioìca

Urtica, the ancient Latin name.

Perennial. Naturalized from Europe. A plant bearing stinging hairs, found in waste land, near barns, along roadsides, crowns rubbish heaps. Nova Scotia to Ontario and Minnesota, southward to South Carolina and Missouri.

Stems.—Two to four feet high, stout, four-ridged, hollow, set with fiercely stinging hairs.

Leaves.—Opposite, long-petioled, ovate, rounded or heart-shaped at base, serrate, acute or acuminate, downy beneath; stipules lanceolate.

Flowers.—Mostly diœcious, small, greenish, growing in the axils of the upper leaves in compound clusters.

Calyx.—In staminate flower four sepals, alike and equal. Pistillate flowers have two sepals larger than the other two.

Corolla.—Wanting.

Stamens.—Four.

Pistil.—Ovary one-celled. Fruit an akene.

Pollinated by the wind. Pollen abundant, no nectar.

If the Stinging Nettle has no beauty, it possesses a forceful personality, for it is armed with poison hairs, a fact so well known that Culpepper, writing of the English flora in 1653, remarks that the Nettles need no

description and adds "they may be found by feeling in the dark," which is very true. These Nettle hairs thickly beset the stout, strong stem on every side. Each hair is set in a cushion of delicate cells, and the

Stinging Nettle. *Urtica dioica*

hair itself is just a long tube with a rounded head thrust a little forward. This tube is filled with an acrid juice and if it is touched so that the rounded head breaks off, the jagged edge pierces the flesh, the juice is injected, and one is stung. As this poison produces a burning and itching pain, it is well to know that diluted alcohol will relieve the distress. An English folk-lore rhyme chants of the Nettle:

"Tender hearted seize the Nettle and it stings you for your pains,
Seize it like a man of mettle and it soft as silk remains."

The Nettle is one of the "lair flora"; these are species which frequent the places where animals feed and lie, as for instance where sheep are herded. It is reported that in the very centre of the African continent one can determine with accuracy the site of a former native village by the presence of Nettles, so strong is this peculiarity. The plant is dicœcious, the staminate flowers produce abundant pollen but no nectar; there is no effort to attract insects. The plant is mothered by the wind.

POLYGONÀCEÆ—BUCKWHEAT FAMILY

PINK KNOTWEED. SMARTWEED

Polýgonum Pennsylvànicum

One of our native common weeds which bears pink spikes above leafy stems; in moist ground, by the roadside or over the fence, on rubbish heaps and in waste places, from midsummer to frost. Nova Scotia to the Gulf of Mexico, west to Minnesota and Texas. July–October.

Stems.—Erect, one to three feet high, smooth, simple or branched, often reddish, the joints swollen and sheathed. The sheaths are united stipules called ocreæ. The upper branches and peduncles often glandular.

Leaves.—Lanceolate or long-oval, two to ten inches long, ciliate, acute or acuminateat apex; petiole short.

Ocreæ cylindric, naked; glabrous.

Flowers.—Small, pink, borne in dense, terminal, obtuse spikes, one to three inches long.

Calyx.—Small, pink or greenish, five-parted.

Corolla.—Wanting.

Stamens.—Eight or ten.

Pistil.—Ovary one; style two-parted.

Fruit.—A shining, circular, flattened seed within the protecting calyx.

This Polygonum grows in colonies whenever it can and is the plant chiefly responsible for the masses of pale-pink flowers in low meadows and neglected fields

in late August and September. As a matter of fact, it is pinker and more flowery when out of blossom than when in, for there is no corolla, and as the calyx enlarges to protect the tiny seed it grows pinker, so that a raceme apparently in the full flush of rosy bloom is really a spike of calyxes mothering the half-ripened fruits.

Pink Knotweed. *Polýgonum Pennsylvànicum*

There seems to be very little method in the arrangement of the opening flowers—it is a sort of free for all—they appear along the axis of the spike apparently as it happens, but eventually all arrive, and arriving is the main thing. Like all the Polygonums its joints are swollen, its upper stems more or less glandular, in order to discourage the ants, and the tiny seeds are full of starch, hence sought by the birds. *Polýgonum lapathifòlium* blooms at the same time as *Pennsylvanicum*, is perhaps a little taller, the raceme paler and more drooping, the flowers a whitish pink with green shadows, otherwise the two are very similar in habit and appearance.

The Common Smartweed, *Polýgonum persicària*, is not native but introduced, and is an abundant weed about dwellings and in barnyards. Its pink spikes are shorter and less slender than those of *P. Pennsylvanicum* and most of its leaves have dark triangular

or crescent marks near the centre. There are first to last from six to eight Polygonums along the highway ere the summer closes. Two of them are climbing vines and bear the common name of Tear-Thumb, because of their sharp bristles; others of the climbing clan are known as False Buckwheats, because of their triangular seeds.

Knotgrass, *Polýgonum aviculàre*, is the insignificant dooryard weed which seems to follow man in his wanderings and finds a home at his very door-step. Its native land is unknown, but it dwells at ease in three continents and possesses to a marked degree the will to live.

It trails its jointed leafy stems over the ground, bearing tiny, whitish, pink-edged flowers, clustered in the axils of the small, oblong, bluish green leaves. In the city it flourishes between the sidewalk and the curb; here it is that in late summer flocks of sparrows may be seen chuckling and chortling with delight as they extract each little seed from its resting-place in the axil of a leaf. This is a city crop that nature raises for the sparrow in spite of all that man can do.

CLIMBING FALSE BUCKWHEAT

Polýgonum scándens.

Perennial. Native. A climbing and trailing plant, with halberd-shaped leaves and inconspicuous flowers. Woods and wayside thickets; has also appropriated wire fences. Atlantic coast to the Rocky Mountains. August–September.

Root.—Deep-boring, branching.

Stem.—Climbing, branching, three to twenty feet in length, slender, pale green, faintly ridged and slightly roughened on the edges. Several from one root.

Leaves.—Alternate, halberd-shaped or heart-shaped with tips and bases rather long-pointed, margin slightly roughened; petioles long and thick; sheath smooth, oblique, slightly rough on the ridges.

Flowers.—Yellowish green, in slender, axillary racemes, more or less interrupted, two to four inches long.

Calyx.—Five-parted, the three outer segments winged and decurrent on the pedicels especially in fruit.

Corolla.—Wanting.

Stamens.—Five to nine.

Pistil.—Ovary one; stigmas three.

Fruit.—Three-angled akenes, obtuse at each end, jet-black, smooth and shining, enclosed in a persistent, winged calyx, about half an inch long; wings crisped not cut.

Climbing False Buckwheat. *Polýgonum scándens*

A conspicuous weed that has found the modern wire fence admirably adapted to its needs and shares it with the Wild Morning-Glory. It is, moreover, capable of shouldering its way through the bushes of a thicket and displaying its flowering racemes in profusion in the sunlight at the top. When no other support offers, it spreads itself over a square rod or so of ground and holds up its fruiting racemes to light and air. It is a capable, efficient, and successful weed. The leaves are usually halberd-shaped, the points of base and apex making an attractive form; the racemes are rather more conspicuous in fruit than in flower, and

the bright, shining, Buckwheat-like seeds are full of food for the birds. They remain on the stems until cold weather comes or the birds remove them.

Very similar to Climbing False Buckwheat is Fringed Black Bindweed, *Polýgonum cilinòde*, with very similar leaves, which are, however, somewhat undulate at margin and finely fringed with white hairs. The stem is red, the same beautiful red we know in our cultivated Buckwheat stems. Common in rocky places, it often hugs the ground. This is the species frequently found at the edge of a railway cut whose long, glowing stems drip over the edge and lie in leafy pendants, apparently enjoying the heat of sun and earth. Its Buckwheat-like seeds are also very grateful to the birds.

There are several species in this False Buckwheat group but these two are the ones most common by the roadside.

CURLED DOCK. CURLY DOCK

Rùmex crìspus

Rumex, the ancient Latin name; meaning unknown.

Biennial. One of the earliest Docks to bloom; found in fields and waste places throughout the entire north; naturalized from Europe; a troublesome weed in cultivated grounds. The tall, bushy, brown fruit-stalk is in evidence on every roadway, one side or the other of the fence.

Root.—Strong, spindle-shaped, thick, yellow.

Stem.—Rather slender, erect, smooth, dark green, one to three feet tall, leafy, few branches near the top.

Curled Dock at Home. - *Rùmex crîspus*

Leaves.—Crisped and wavy-margined; the lower oblong or oblong-lanceolate, six to ten inches long, long-petioled; the upper narrowly oblong or lanceolate, three to six inches long, short-petioled, cordate or obtuse at the base.

Flowers.—Small, green, borne in a branching panicle twelve to eighteen inches long, rather open; the racemes continuous or interrupted, one to five inches long, with the flowers in crowded whorls.

Calyx.—Six-parted, the three inner segments mostly developed into wings, and each bears a tubercle; the three outer ones are unchanged in fruit. Of the three tubercles one is fertile and bears a seed, the others are sterile.

Corolla.—Wanting.

Stamens.—Six.

Pistil.—With three styles; stigmas tufted.

Fruit.—Akene, three-sided, plump, shining, loved by the birds.

The Curly Dock belongs to the irrepressible rabble of immigrant weeds that no man can number and no man control. One of the earliest Docks to bloom, it can be easily recognized by its narrow, oblong leaf with crisped and wavy margins.

The stem simple and erect in May, is later topped by a compound panicle six to twelve inches long of small green flowers in crowded whorls. These flowers are destitute of petals, but have six stamens and three styles with tufted stigmas. The six sepals stand in two rows of three; those of the inner row heart-shaped, beautifully veined, uniting to form valves that enclose the seed, giving it triple wings which greatly aids its distribution by the wind; all three valves have a rather thick, rounded, corky, tubercle on the back.

As the flowering panicle becomes the fruiting panicle it absorbs and overwhelms the plant; the central stalk and all its branches are heavily burdened with golden-brown, winged akenes in crowded whorls around the stems. Only a few slender, wavy-edged leaflets are here and there. Finally the fruiting stem becomes darker in color, all greenness forsakes it. It stands up rigid, stiff, and forbidding just over the fence in serried rows and groups.

Leaf of Common Dock. *Rùmex obtusefòlius*

And yet nature is kind to her vagabonds as well as to the elect. Come into close quarters with the plant and in a way it commands respect for its prolificness as well as the beauty of its seed-bearing wings. Each upright brown stem bears hundreds of tiny, triangular seeds that feed the creatures of the wild, on four feet or on two.

There are other Docks, unwelcome visitors, but the Curly Dock is one easily recognized. The books record one hundred and thirty species of wide geographic distribution.

When fruiting time comes Curly Dock is not alone, nor is it responsible for all the stiff brown wands that show their tops in the tangle. In many localities the Broad-leaved Dock, *Rùmex obtusefòlius*, is the more common of the two, and the greater pest. It may be known by its broad leaves, six to twelve inches long with heart-shaped bases and rounded or bluntly pointed tips, the midvein conspicuous and often reddish, and the margins even or somewhat wavy and slightly ruffled. A specific difference is that but one of the

valves bears a tubercle and that the akenes are dark, shining red. These two Docks freely hybridize and many specimens occur partaking of the characters of each.

All the Docks are typical weeds. "No coign of vantage," but is seized by these intrepid and virile plants, that respond to their environment so rapidly and so thoroughly, as to upset one's calculations again and again, for they seize the earth with a grip so fierce that they are with difficulty dislodged.

CHENOPODIÀCEÆ—GOOSEFOOT FAMILY

LAMB'S-QUARTERS. WHITE GOOSEFOOT

Chenopòdium álbum

Annual. A common weed in gardens and waste places, gray-green in general aspect. Everywhere. Naturalized from Europe, also native to Asia.

Stem.—Slender, pale green, erect, much branched, one to six feet high.

Leaves.—Rhombic-ovate, or the upper lanceolate, narrowed at the base, three-nerved, dentate, sinuate or lobed, or the upper entire; petioled or sessile, often mealy.

Flowers.—Minute, gray-green balls in terminal and axillary spikes, simple or compound, open panicled.

Calyx.—Two to five parted, enclosing the utricle in fruit.

Corolla.—Wanting.

Stamens.—One to five.

Pistil.—One; style two or three.

Fruit.—Utricle containing a small, flat, shining seed.

A common omnipresent weed, curiously enough not generally known by name although it haunts our gardens in company with the Pigweeds, *Amaranthus hybridus* and *Amaranthus retroflexius*, and lives at ease on waste heaps and in barnyards. For its common name, Lamb's-Quarters, I find no satisfactory explanation.

In general aspect the plant is quite unlike any of its garden companions and this makes it easily distinguishable. In the first place the entire plant is a pale gray-green; stalk, leaf, branch, and blossom, all gray-green. In height it varies from two to six feet, bears a central stalk which branches freely and loosely, and its leaves are borne sparingly. The normal leaf is rhombic-ovate in shape, usually three-veined, lobed or sinuate and often white mealy on the lower surface. The upper leaves are often lanceolate and sessile.

Lamb's-Quarters. *Chenopodium album*

In August the entire plant apparently bursts into bloom and the bloom is gray-green like the leaves, a little paler possibly and to all appearance consists of innumerable tiny balls clustered in compound spikes at the tip of the central stalk and of the branches. Each of the tiny ball-blossoms consists of a green calyx, often ridged, a few stamens, and a pistil which, when mature, becomes a utricle, that is, a minute green bag which encloses a black shining disk of a seed. Each average plant will mature many hundreds of seeds, which are so generally scattered throughout the upper layer of garden soil that the astonishing thing is not that there are so many seedlings but that there are so few. In autumn the green stem reddens, the leaves become red and yellow, and the stalk at length withers.

PHYTOLACCÀCEÆ—POKEWEED FAMILY

POKEWEED. GARGET

Phytolácca decándra

A name made of the Greek word for plant prefixed to the French *lac*, lake, alluding to the crimson coloring matter of the berries.

Perennial, native. A large smooth, branching herb, with stout stalks, six to nine feet high, in fence corners, roadsides, and waste land. Maine, Ontario, Minnesota, south to Florida and Texas. July–September.

Root.—Large, often four to six inches in diameter, poisonous.

Stems.—Stout, branching, from six to nine feet high, when mature, reddish.

Leaves.—Alternate, petioled, oblong to lanceolate, pointed at both ends, entire, six to twelve inches long. Unpleasant odor when crushed.

Flowers.—White, with a green centre, pink tinted outside, about three-eighths of an inch across, in long, slender racemes, two to eight inches long.

Calyx.—Four or five rounded, persistent sepals, looking like petals.

Corolla.—Wanting.

Stamens.—Ten, shorter than the sepals, sometimes more.

Pistil.—Ten-celled, green, conspicuous; styles ten, recurved.

Pokeweed in Fruit. *Phytólacca decándra*
Leaf of Virginia Creeper. *Ampelópsis quinquefòlia*
Leaf of Poison Ivy. *Rhus microcárpa*

Fruit.—Juicy, dark purple berries, hanging in racemes from reddened peduncles.

Pollinated by bees and flies. Nectar-bearing. Anthers mature before the stigma.

Through the long, hot days of summer the Pokeweed plant has been pushing upward and outward, growing vigorously and uniting with the verdure which surrounds it and of which it is a part, and then some day one becomes conscious of an arborescent herb holding out on its many branches long racemes heavy with shining berries that are full of crimson juice. At fruiting time the plant glows and throbs with color. "All on fire with ripeness," it flames in crimson; stem, branches, branchlets, fruit stems, and pedicels, petioles, midribs, and veinlets, all red—a glowing red. To find this superb creature standing alone, unhurt by man or beast, rising eight to ten feet by roadside or waterway, unseen before but now dominating its neighbors in regal fashion, is an experience. It yields slowly and reluctantly to the changes of the closing year, it possesses the will to live, and live it will. One often finds racemes even in November which bear at once shining fruit, open flowers, and growing buds, while around and upon it beat the storms of coming winter.

CARYOPHYLLÀCEÆ—PINK FAMILY

WHITE CAMPION. EVENING LYCHNIS. NIGHT-FLOWERING CAMPION

Lýchnis ạ́lba. Lýchnis noctiflòra

Lychnis, Greek, meaning lamp, in allusion to the flame-colored flowers of some species.

Biennial, naturalized from Europe. A sticky-leaved plant, two or three feet high, opening its white flowers in the afternoon and closing during the next morning. New England and Middle West. June–August.

Root.—Thick, fleshy.

Stem.—One to three feet high, densely covered with short viscid hairs, freely branching, dark green, reddish at the junction of stem and branch.

Leaves.—Opposite, ovate-lanceolate; margin entire, apex pointed; densely hairy; lower leaves tapering to margined petioles, upper ones sessile.

Flowers.—White or tinged with pink, in loose panicles, diœcious, more or less fragrant, each about an inch across, opening at evening or on dull days and closing after sunrise the next morning.

Calyx.—An inflated hairy cup, many-ribbed, dark green, often stained along the ribs with maroon-crimson, with five pointed lobes, densely viscid-hairy. Ribs usually ten. Fertile cups much inflated by the growing capsule.

Corolla.—Of five long-clawed petals, white, each deeply notched at the border and at the inner point bearing a pair of white petal-like bracts, which together with those of the other petals make a tiny corona at the throat of the flower.

Stamens.—In sterile flowers usually ten; filaments white, threadlike; anthers white.

Pistil.—Ovary one-celled; styles five.

Fruit.—An inflated capsule, with unbent valves at the apex which curve outward when ripe. Seeds many, small, grayish brown, beaded with fine tubercles.

Pollinated by night-flying moths. Nectar-bearing.

White Campion. *Lýchnis álba*

The study of a night-blooming plant is always interesting because in it nature shows so clearly, that he who runs may read, her aims and hopes. Every flower expresses the hope and expectation of the plant, and plants that bloom in the night must conform to their environment. Usually the blossoms are white so as to utilize all the light there is—for white can be distinguished when other colors are dimmed. Then they are fragrant; winged night wanderers, it is known, smell much better than they see. Then, too, the flower must be protected against crawling night marauders who might eat the nectar but would not fertilize the blossom, so the stem is beset with sticky hairs, a very real defense and fortification against slugs. To reward the real guests of the evening nectar is provided, and so equipped the Night-Flowering Cam-

pion enters upon its life journey sure to arrive at the end.

The flower is very beautiful, pure white, five-petioled, each petal notched, a delicate corona at its throat; the calyx darkened with many maroon-red hairy ribs. There are two kinds of flowers, the sterile with ten stamens and no pistil; the fertile with a pistil which as time goes on becomes a fruiting capsule of exquisite urn form, enlarging itself and expanding the calyx with it, until when mature it turns back its little points at the rim and makes a model for the artists of the world.

By day the plant is a disheartened, unhappy-looking creature, the spent blossoms are falling, the coming ones are pushing out from the enlarging calyxes and parting the five reddish teeth. But as night approaches both poise and attitude change. They open white, alert, expectant, and pour forth a wealth of fragrance upon the evening air,

> " . . . from buds that keep
> Their odor to themselves all day,
> But when the sunlight dies away
> Let the delicious secret out
> To every breeze that roams about."

Lýchnis dioìca, the Red Campion, very similar to the White, is often found growing with it.

BLADDER CAMPION

Silène latifòlia. Silène vulgàris.

Silene, Greek, saliva, in allusion to the viscid secretions of many species.

Perennial by creeping rootstocks. Naturalized from Europe. Prefers moist soil. and found in fields, road-

sides, and waste places. Regarded as a bad weed. New Brunswick and Ontario, south to New Jersey, Illinois, and Iowa. June–October.

Stem.—Six inches to two feet high, smooth, leafy, tufted, branching at the base.

Leaves.—Opposite, thick in texture, smooth, oblong, pointed; upper pairs meeting about the stem; the lower ones spatulate, narrowing to margined petioles.

Flowers.—In loose open panicles, on slender pedicels, slightly drooping; the pale green, inflated calyx seeming more of the flower than the white corolla. Fragrant at night.

Calyx.—Pale green, veined, much inflated.

Corolla.—Of five, long-clawed, deeply cleft petals, giving a wheel effect, white.

Stamens.—Ten; filaments long, threadlike, white; anthers purplish brown.

Pistil.—Ovary one; styles three, slender, white.

Bladder Campion. *Silène latifólia*

Fruit.—Broadly ovoid capsule, opening with five recurved teeth. Seeds brown, rough.

The Bladder Campion has a beautiful flower; at the same time the plant is reported as a pernicious weed. It is said to have arrived in this country by way of Boston and finding the surroundings congenial has remained, notwithstanding the many exhorta-

tions to farmers to destroy it. Possibly it is not easy to destroy.

Its marked characteristic is the odd, little, bubble-shaped, pale green calyx which encloses a small pistil, and the slender claws of five petals, which when they emerge into the outer world broaden into a ten-spoked wheel. This calyx has provoked many common names: Whitebottle, Cow-Bell, Bubble Poppy. The flowers appear in rather drooping clusters and the effect of the plant is unique and beautiful.

BOUNCING-BET. LADY BETTY

Saponària officinàlis

Saponaria, Soapwort; because the mucilaginous juices of stem and root will make a lather in water.

An escape from early gardens, now found by roadsides, along railroad tracks and in neglected fields throughout the north as far as the foot-hills of the Rockies; spreads by underground stolons. From central Europe. June–November.

Stem.—One to two feet high, leafy, smooth, swollen at the joints.

Leaves.—Opposite, ovate, entire, acute at apex and distinctly three-veined.

Flowers.—Pale pink or rose, single, rarely double, or with petals cut, in loose terminal or axillary clusters.

Calyx.—Cylindrical, five-toothed, pale green with purplish tinge at apex; readily cutting down at one side.

Petals.—Pink, five or more, long-clawed, border spreading, with small crown at the base, usually notched.

Stamens.—Ten, five usually maturing somewhat earlier than the other five, inserted.

Bouncing Bet. *Saponària officinàlis*

Pistil.—Ovary slender, oblong; styles two, curved at apex.

Fruit.—Oblong capsule with many seeds.

Curiously enough there is a small group of plants that are united not by botanical affiliations but by social status. Two well known members of this outlawed group are *Saponària officinàlis*, Bouncing-Bet, and *Linària vulgàris*, Butter-and-Eggs. Both originally of the garden are now outcasts, both in their primitive forms bear flowers of great beauty. It is clear that their vitality has wrought their social ruin. No garden wall could restrain their activities, and leaving the conventions of the garden walk they have sought the unregenerate society of the pastures and the roadsides.

The flowers of Bouncing-Bet in shape are like single Pinks and grow in loose bunches. The color varies from palest pink to rose. The stamens are ten in number. As the corolla opens, five of these thrust their heads out of the tube, the anthers mature and give up their pollen. When these five have shed their pollen, the other five emerge, mature, open, and scatter their pollen. All this time the pistil lies concealed in the flower tube, but as the second set of stamens mature it comes out of its seclusion and the two stigmas separate and expand. Butterflies by day and moths by night carry pollen from the younger flowers to the pistils of the older ones.

The leaves are opposite, dark and smooth; distinctly three-veined and somewhat puckered at margin. The stems contain a gummy juice which makes a lather when it is mixed with water and this is the reason for the name Soapwort.

Notwithstanding her neglected condition, the plant has developed several clearly defined forms; one with fimbriated petals and another full double, both extremely beautiful. The great fault of the flower is the weakness of the calyx, which is not strong enough to hold fast against the pressure of the petals and cuts down on one side, permitting the petals to fall out. This is the fault of many primitive Pinks, the strong calyx is the result of cultivation and selection.

NYMPHÆÀCEÆ—WATER-LILY FAMILY

WHITE WATER-LILY

Nymphæa odoràta. Castàlia odoràta

Nymphæa, dedicated to the water nymphs. *Castalia,* a fountain on Mount Parnassus sacred to Apollo and the Muses.

This is the white, sweet-scented Water-Lily of the north, found in the still or slow-flowing water of lakes and ponds; it varies into a form with pink flowers. Another species *Nymphæa tuberòsa* is associated with it in western waters. Both are the primitives of many hybrid forms. June–September.

Rootstocks.—Long, prostrate, often as thick as one's arm, which send up floating leaves and large flowers.

Leaves.—Floating, circular, four to twelve inches in diameter, with a narrow cleft reaching nearly or quite to the petiole. Under side of leaf reddish and hairy, with many prominent veins, upper side smooth, green; margin entire. Petioles and peduncles with four, main air-channels; strong, yielding.

Flowers.—Floating, white, large, fragrant.

Sepals.—Four.

Petals.—Many in several rows, inserted on the ovary, gradually passing into stamens.

Stamens.—Many, the outer rows with petaloid filaments; the inner rows with linear filaments and elongated anthers.

Pistil.—Ovary globular, of many carpels united into a compound pistil of many cells; around a little knob

at the top the numerous stigmas radiate as in a poppy-head ending in long and narrow incurved lobes.

Fruit.—The many-seeded ovary enlarged, covered by the persistent bases of the petals. Each ripe seed is in a little aril or bag, open at the top. The fruit ripens under water.

Pollinated by bees and beetles and aquatic insects. Pollen, no nectar.

"From the reck of the pond the lily
Has risen in raiment white;
A spirit of air and water,
A form of incarnate light.
Yet, except for the rooted stem
That steadies her diadem,
Except for the earth she is nourished by,
Could the soul of the lily have climbed to the sky?"

—Lucy Larcom.

Very generally throughout the Northern States in certain elect places where the under soil is rich, the water smooth and not too deep, preferably the borders of lakes and the slack water of rivers, the White Water-Lily finds a home. The great leaves have floated since May, rising from a rootstock deep in the silt borne on stems strong and pliable as if made of rubber, the strength and flexibility gained by having four hollow, tubular channels extending the entire length of the stem. The circular leaf is leathery and often bronze-red beneath, with prominent veins; above, the surface is green and polished, and here are the breathing pores. Most leaves have these stomata in the lower surface, but the Water-Lily must have them above.

In early June the buds begin to appear, making their way upward through the water on peduncles adjusted

White Water-Lily at Home. *Castàlia odoràta*

to the water's depth; and at length, when summer days are long and warm, the buds open and the many petaled cups of snow appear, so perfect in form, so delicate in texture, so spotless, so fragrant that one stands charmed by their exquisite perfection.

Every radiant floating cup is an anchored boat that rises and falls with the undulating flow of the water. The four sepals, each a tiny canoe in shape, lie under the corolla and help to sustain the flower. The flower-stems—strong, hollow tubes—are equipped to bear the stress and pull of mud and wave, and they hold their own bravely. The life of the blossom is about three days, opening in the morning and closing at night.

A careful study of the flower shows clearly that sepals, petals, and stamens, have the same origin and grade into each other; the intermediate stages are clear.

After the Lilies have blossomed, the flower-stem begins to curve and coil and finally pulls the seed-pod, now within the remnants of the petals, under water where it ripens, letting the seeds out on the water floor. Each seed is in a little bag called an aril, which serves as a life-preserver floating the seed off for some distance from the parent plant. The aril finally decays and the seed falls to the bottom, where if conditions are favorable it develops into a new plant.

YELLOW POND-LILY. SPATTER-DOCK

Nùphar ádvena. Nymphæa ádvena

Nuphar, said to be of Arabic origin.

Perennial. A stout water plant with large, thick leaves, floating, emersed, or erect; bearing large, coarse, yellow flowers, found in still water, ponds, or slow streams. New Brunswick and Nova Scotia to Florida, westward to Texas and the Rockies. July–September.

Rootstock.—Cylindrical, creeping; anchored in the mud.

Stem.—Large, coarse, smooth.

Leaves.—Tough, leathery, floating or erect or emersed, six to twelve inches long, broad oval or ovate, heart-shaped or deeply cleft at base, entire.

Flowers.—Yellow, often greenish outside, rarely purple-tinged, depressed globular in shape, two to three inches across.

Calyx.—Of six yellow sepals, concave, thick, fleshy, unequal in size.

Corolla.—Petals many, stamen-like, oblong, fleshy, short.

Stamens.—Many, shorter than the petals and packed in five to seven rows around the ovary, from which they radiate and recurve, filling up the flower-cup.

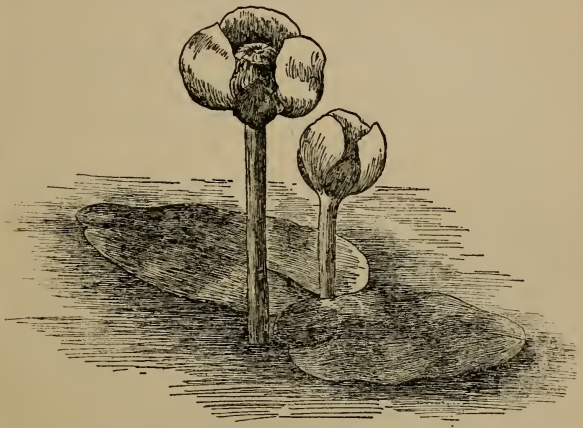
Pistil.—Ovary depressed globular, compounded of many carpels; the stigmatic disk, pale red or yellow with twelve to twenty rays.

Fruit.—Of many carpels, ovoid.

Pollinated by beetles, bees, and flies; nectar-bearing. Stigma rays begin to mature a short time before the anthers, so that both cross and self-fertilization is possible.

The Yellow Pond-Lily dwells in a world of muddy bottoms and sunny exposures, and in quiet waters

often grows in such numbers as to impede a canoe or a rowboat. Then, too, it figures as a disappointment when the floating leaves lead to the hope that the White Lily may be found, and one really finds only the upright stalks and the coarse yellow bowl of the Yellow.



Yellow Pond-Lily. *Nymphæa ádvena*

The rigid flower gives the curious effect of being a stunted blossom which had become deformed before it had a chance to mature; it never seems quite open, and it takes some time before one comprehends that it will never open, that its convex sepals will never spread, that its stamen-like petals will never give themselves unreservedly to the sun.

The flat top of the great pistil which is composed of many carpels is either orange-red or yellow and decorated with twelve to twenty-four rays radiating star-like from the centre. The flowers exhale an

unpleasant odor, and flies and beetles are plentiful about them. The roots are said to have been used by the Indians as food.

AMERICAN LOTUS. CHINQUIPIN

Nelúmbo lùtea

Large, bold, aquatic herbs, with long-petioled, orbicular leaves and large cream-white flowers of Pond-Lily type. Massachusetts, Ontario to Minnesota, southward to Florida.

Rootstocks.—Thick, tuberiferous, which creep in the earth at the bottom of ponds and shallow waters. Edible.

Leaves.—Long-petioled, orbicular, often somewhat constricted in the middle, centrally peltate, prominently ribbed, glabrous above, more or less pubescent beneath. Submerged leaves small and scale-like.

Flowers.—Solitary, large, showy, four to ten inches across, cream-white; peduncles thick, tall with several large air-canals.

Sepals.—Four to five, imbricate in bud.

Petals.—Many, obovate, obtuse, concave, inserted on the calyx, erect, spreading.

Stamens.—Many, inserted on the calyx, filaments more or less petaloid; anthers introrse and appendaged.

Pistil.—Many distinct carpels embedded in pits in a large convex receptacle. Styles short.

Fruit.—Nuts resembling acorns, embedded in a large, obconic, flat-topped receptacle two and a half to three inches across; edible.

Pollinated by beetles and flies. Stigmas mature before the stamens.

It is not often that the American Lotus appears by the roadside; indeed, the most, and perhaps only,

American Lotus at Home. *Nelúmbo lùtea*

hopeful place to look for it is in the lowlands and swamps that border the Great Lakes. The roots and seeds of the plant are farinaceous and edible, and it was early known that the Indians cultivated it in the waters of the Tennessee and Cumberland Rivers and that it was abundant in the tributaries of the Mississippi. Professor Gray originally reported the plant from Sandusky Bay and eastward along the southern shore of Lake Erie, and it occurs locally here and there in Massachusetts and Connecticut. The Indians are believed to have disseminated it.

The plant possesses an especial interest, because it is one of the two species of Nelumbo in existence. The other is the Pink Lotus of Asia, *Nelúmbo Nelúmbo*, now extensively cultivated in parks and gardens.

The leaves of this bold impressive plant are usually raised two to four feet above the surface of the water, are circular in shape, one to two feet across, and more or less depressed in the centre over the attachment of the petiole.

The flowers are reported pale sulphur-yellow; personally I have found them cream-yellow. They are four to ten inches across, with obtuse, obovate, concave petals and suggest a Water-Lily. The plant seems to be hardy throughout the Northern States and is now very generally planted in park ponds and water gardens.

RANUNCULÀCEÆ—CROWFOOT FAMILY

CLEMATIS. VIRGIN'S BOWER

Clēmatis Virginiāna

Clematis, Greek name for some climbing plant.

A perennial vine trailing over fences and walls, climbing to twigs and branches, found along river banks, in lanes, lowlands, and roadside thickets. Nova Scotia to Manitoba, south to Georgia and Kansas. July–September.

Stem.—Slender, leafy, tough, woody-fibred, sometimes purple-stained, from ten to twelve feet long, trailing and climbing by means of its leaf stems which support the vine by hooking or coiling spirally around whatever happens to be available.

Leaves.—Opposite, petioled, compounded of three leaflets, rarely five, leaflets short-stemmed, oval, coarsely serrate or lobed, acute or acuminate at apex, rounded at base, veins prominent.

Flowers.—White, borne in full panicled clusters from the axils of the leaves; dicœcious or polygamo-dicœcious, that is, the staminate and the pistillate blossoms grow on separate plants, or now and then those with both stamens and pistils are found among the others. About an inch across and delicately fragrant.

Calyx.—Four or five white, oblong, petal-like sepals, forming starry flowers.

Corolla.—Wanting.

Stamens.—Many in the staminate flowers; wanting or imperfect in the pistillate flowers.

Pistil.—Many carpels in the polygamo-dicœcious and pistillate flowers; wanting in the staminate flowers. As the carpels ripen the styles lengthen into conspicuous feathery tails.

Fruit.—Akenes with long, white, hairy plumes.

Clematis. *Clématis Virginiána*

The Wild Clematis is the graceful queen of our northern roadsides, trailing over rocks and fences, swinging its drooping sprays in charming abandon from the tops of shrubs and the low branches of trees. It may generally be found throughout the north, blooming in midsummer, wherever there is a thicket of bushes in the open, protected from cattle, or a fence along a shady roadside. The roots need the coolness and moisture which the thicket gives, and the stems, woody but weak, require support so the plant shoulders its way up to the sunlight.

The Clematis stem does not twine, it puts forth no tendrils; the leaf-petioles do the work, they coil around outlying branches and twigs, and in this way the stem rises little by little until, having reached the top it spreads out its clusters of white stars to the sunlight and rejoices in its success.

The flowers are of two kinds, pistillate and staminate, borne usually on different plants, sometimes on the same. The staminate flowers have white plumy stamens, those in the very centre pale yellow, while the pistillate flowers have a bunch of carpels giving them a green centre. Frequently the pistillate flowers have stamens as well, but these are often sterile, made of filaments only, no anthers.

It is interesting to watch the fruiting of a Clematis vine. As the flowers are both sterile and fertile, the sterile blossoms fall and the blooming panicle dries up and disappears. But the fertile panicle as soon as the white petals fall begins to show what it can and what it means to do. The bunch of pistils in the centre of each flower becomes a ball, and the style of each little carpel begins to lengthen and in time transforms itself into a long hairy plume, green at first, but as autumn advances it becomes silvery white; so that the plant at length covers itself with feathery masses more noticeable and more fascinating than were the flowers. These one-seeded carpels do not open, but trusting this one wing to the wind, they sail forth whither fate impels.

A plant very like our Clematis grows in England and there has obtained the name of Virgin's Bower and Traveller's Joy, names sometimes transferred to our own species. Many of the old common folk-

names have a sentiment beneath them and Traveller's Joy is as fitting and appropriate to the plant of our northern highways as to that which billows and clambers along English lanes.

CIMCIFUGA. BLACK SNAKEROOT

Cimcífuga racemósa

From *cimex*, a bug, and *fugere*, to drive away.

Perennial. Native. A tall, slender, leafy-stemmed plant, three to eight feet high, growing in shady and rocky woods. Bears feathery white flowers in a long, compound, terminal raceme. Maine, Ontario, and Wisconsin, south to Georgia and Missouri. June–September.

Root.—Thick, knotted.

Stem.—Flowering stem, three to eight feet high, slender, leafy, rising from a group of long-stemmed, thrice-compounded, basal leaves.

Leaves.—Alternate, compound first with three divisions and each division pinnately cut, and the ultimate divisions often again compound. Leaflets ovate or oblong, the terminal one obovate, incisely toothed, cut, or divided.

Flowers.—White, small, of fetid odor, crowded in compound terminal racemes that vary from six to twenty-four inches long.

Calyx.—Of two to five petal-like sepals, falling early.

Corolla.—Of four to eight, two-cleft, narrow petals.

Stamens.—Many, with long filaments.

Pistil.—Carpels one or two; stigmas broad.

Fruit.—Follicles, oval, minutely beaked.

These tall, white, flowering stems crowning a leafy wand six to eight feet high and lighting up the shadowy

places of a midsummer woodland with three to five-armed candelabra are worth going far to see. The fleecy white blossoms bear a fetid odor and the flowers of the long raceme are never all in bloom at the same time, so that the plant is more admirable at a distance than close at hand. But its virtues surpass its demerits.

BUTTERCUP

Ranúnculus ácris

Ranunculus, little frog, given by Cluny to the genus because some of the species grow in swampy places.

Perennial. Naturalized from Europe. Everywhere in fields and roadsides. Bad weed in pastures; animals avoid it because of its acrid juices. June–November.

Stems.—Erect, two to three feet high, stout, hairy, hollow.

Leaves.—Varied, lower leaves may have from three to seven deeply cut divisions; these divisions may again be cleft. Stem leaves usually three-parted and clasp the stalk where it branches. Basal leaves have long, narrow, grooved petioles and form spreading tufts near the ground.

Flowers.—Brilliant yellow, saucer-like flowers, that look as if varnished, outer surface dull and paler in color.

Calyx.—Of five sepals, about half as long as the petals, pale yellow with brownish tips.

Corolla.—Of five, broad, wedge-shaped petals varnished yellow, each with a tiny scale at base where is produced the nectar of the flower.

Stamens.—Many, inserted on the receptacle.

Pistils.—Many, developing into akenes.

Pollinated by beetles, bees, and butterflies. Nectar-bearing. Stamens develop before the pistils.

Cimcifuga at Home. *Cimcífuga racemòsa*

As the procession of the flowers moves on its appointed way, in the high-tide of the floral year comes the Buttercup associated with the Daisies and the Clovers. There have been earlier Buttercups, the Buttercup of dry woodlands that bloomed in April, the Buttercup of moist lowlands, companion of the flowers of early spring, but the Buttercup of literature, the Buttercup that sways with the Daisies and dances in the wind of the upland meadows, the Buttercup that is part of the childish test that one likes butter is *Ranunculus acris*, a citizen of the wide, wide world. The color of this brilliant cup is luminous against the light or with the light, it is marvellously, gloriously yellow, a wonder of color.

Buttercup. *Ranúnculus ácris*

The study of the opening of a Buttercup flower is most interesting as it shows the blossom's plan for cross-fertilization. As the petals expand the stamens, a little bunch of yellow balls, are huddled together in the heart of the flower, surrounding and covering a little green ball of unawakened pistils. The outer circle of stamens spreads out, the anthers give up their pollen, the tiny pit at the base of each petal is full of

nectar, and the bright petals outspread in the sunlight, call to the bee. One after another, or in groups, the stamens stand up, spread out and in time all the pollen is gone. Then the sleepy ball of pistils awakens; it, too, spreads out, each tiny pistil becomes sticky at its upper point ready to catch any pollen a bee may bring. So it comes about that the younger flowers pollinate the older ones, and no flower fertilizes itself. The age of a flower can be estimated by the greenness of its centre. If the centre is all yellow the flower is young; if green is just beginning to show in the centre, it is middle-aged; if the green is a decided ball the flower is old. Finally the petals and sepals fall and leave behind a green bunch of pistils with sometimes a fringe of old stamens. Each pistil develops into a true akene armed with a short hook which may help it some day to catch a ride.

Buttercups in quantity would be poisonous to grazing animals, but the juices are so acrid that the plants are untouched and stand a bunch of green leaves and yellow blossoms even in closely cropped pastures. Drying mitigates the poison and a few Buttercups in hay are not considered to injure it.

TALL MEADOW-RUE

Thalictrum polýgamum

Thalictrum, derivation doubtful.

Perennial. One of the most beautiful of our native, summer-flowering plants, bearing a large, loose panicle of soft white blossoms at the summit of a tall, erect stem. Found in low, wet meadows, swampy places, and in up-

land woods often dominating the roadway. Labrador and Quebec to Florida, west to Ohio.

Stem.—Five to six feet high, leafy, branching.

Leaves.—Basal and stem leaves, compound in threes, three to four times; leaflets oblong, obovate, or orbicular, with three rounded, shallow lobes, the result of the many divisions making a fern-like leaf. Stem leaves alternate.

Spray of Tall Meadow-Rue. *Thalictrum polygamum*

Flowers.—White, polygamo-diœcious, borne in loose, terminal panicles, making large fluffy clusters.

Calyx.—Of four or five sepals, falling early.

Stamens.—Numerous, white, threadlike, spreading in feathery tufts.

Pistil.—Ten to fourteen carpels in the fertile flowers, each containing one seed.

Tall Meadow-Rue is most attractive whether in leaf or in flower. The leaves are so compounded as

to make the plant a vision of grace and beauty even before the blossoms appear. When in full bloom the great loose clusters of fluffy white flowers are beautiful to see, and not only in the lowlands are they found, but in the uplands of New England they dominate the roadside.

The flower panicles are usually of feathery blossoms, exquisite in their white delicacy, though now and then a group of flowers are dull and greenish. The plant is dicœcious or polygamo-dicœcious, and when the blossoms are greenish it means there are more pistillate than staminate flowers in a group. The pistils, which are green, outnumber the stamens, which are white. The blossoms have no petals and the sepals fall early; the stamens with white filaments constitute the greater part of the flower.

The flowers and stems of Purple Meadow-Rue, *Thalíctrum purpurâscens* have a purplish tinge. The plant is common in northern Ohio and blooms after the Early Meadow-Rue and before the Tall Meadow-Rue.

CRUCIFERÆ—MUSTARD FAMILY

BLACK MUSTARD

Brâssica nìgra

Annual. A large, branching plant bearing many yellow crucifer flowers, common in fields, roadsides, and waste places. A well-known weed in California. Naturalized from Europe. June–November.

Stem.—Two to seven feet high, branching widely.

Leaves.—Alternate, petioled, large, coarse, rough, dark green. Lower leaves are eight to twelve inches long and consist of a central midrib which bears two or three pairs of small irregular divisions and a large terminal lobe which is very irregularly lobed and toothed. The upper leaves are less divided and the uppermost are linear, entire, and commonly drooping.

Flowers.—Yellow crucifers, in long, dense racemes, both terminal and lateral.

Sepals.—Four, pale yellow, narrow, widely spreading.

Petals.—Four, with long claw and spreading blade.

Stamens.—Six, four long and two short.

Pistil.—Ovary two-celled. Pods narrowly linear, closely oppressed to the axis of the raceme, one-half to three-fourths of an inch long. Seeds dark brown, pungent.

Pollinated by flies and bees. Nectar-bearing. Stamens mature before the stigma.

Three common Mustards linger in our fields and wander along our roadsides. The first is an April blossom continuing into May. This is the Winter

Cress, the Herb of St. Barbara. Another is Charlock, Wild Mustard, with leaves resembling those of Black Mustard but not so much cut, and pods constricted between the seeds and tipped with a long, flattened beak which often is one-seeded. Its flowering season runs from May to November. It is a common and annoying weed.

Black Mustard. *Brássica nigra*

The Black Mustard is the familiar form of the genus that appears abundantly in fields, roadsides, about abandoned farm buildings and weed-grown foundations. Though cultivated in Europe it is here regarded as a pest. The leaves are large, alternate on the stem and show little difference between petiole and midrib, the two run together. The leaf consists of two or three pairs of small variable leaflets, more or less misshapen, balanced at the end with a large terminal lobe, which is, itself, usually lobed and sharply toothed. The flower is in the shape of a Greek cross and when full-blown is loose in structure. The small yellow sepals spread wide apart, the long-clawed petals lean away from each other, the six stamens likewise lean away from the centre of the flower, and the stigma does not become receptive until most of the home pollen has been scattered. The flowering impulse begins at the bottom of the cluster, the stem lengthens as the flowers

open, and trails of seed-pods follow the flowers and hug the stem.

The small, dark brown seed is a valuable commercial product. It furnishes much of the mustard of the table, as well as one of the best-known household applications for common ills. The use of mustard foot-baths and mustard plasters is only too well known. The oil of mustard used in liniments is intensely pungent. When used as fodder the plant is harvested before the seeds mature.

"The kingdom of heaven is like unto a grain of mustard seed, which a man took and sowed in his field; which indeed is less than all seeds; but when it is grown is the greatest among herbs and becometh a tree, so that the birds of the air come and lodge in the branches thereof." Matt. 13 : 31, 32.

Whether our common Black Mustard is the Mustard of the parable is a question of some dispute, but it is a fact that this is the Mustard cultivated throughout Europe and that it grows luxuriantly in Palestine. It is also known that the comparison between the size of the seed and the height of the plant was proverbial in the East at the time Jesus used it. The trend of the evidence is strongly in favor of this weed.

Helen Hunt, writing in "Ramona," says: "The Wild Mustard of Southern California is like that spoken of in the New Testament in the branches of which the birds of the air may rest. Coming up out of the earth so slender a stem that dozens can find a starting-place in an inch, it darts up a straight, slender shoot, five, ten, twenty feet high, with hundreds of fine, feathery branches, locking and interlocking with all the hundreds around it until it is an inextricable

network like lace. Then it bursts into yellow bloom and becomes still finer, more feathery and lace-like. The stems are so small and so dark a green that at a short distance they do not show and the cloud of blossoms seems floating in the air—at times it looks like golden mist."

The Wild Turnip is another *Brassica*, having Mustard flowers and appearing more or less abundantly in gardens and cultivated fields. It seems to be the common Turnip gone wild and persists for one or two generations and then disappears. It may be distinguished from the Black Mustard and the Charlock by its leaves. The lower leaves are lyrate and petioled, but the upper leaves are clasping, and all are much softer in texture than those of the other species.

Wild Turnip. *Brássica campéstris*

CRASSULÀCEÆ—ORPINE FAMILY

LIVE-FOREVER. ORPINE

Sèdum telèphium

Sedum, from the lowly habit of many of the species.

A common perennial with smooth, fleshy leaves, naturalized from Europe, and found growing in tufts by roadsides and in fence corners.

Stems.—Stout, pale green, tufted, smooth and slightly glaucous, one to two feet high.

Leaves.—Alternate, very smooth, fleshy, ovate to obovate, obtuse, coarsely dentate, one and a half to two inches long; more or less sessile.

Leaf of Live-Forever. *Sèdum telèphium*

Flowers.—Small, borne in flat, terminal clusters, two to three inches across, pale, dull, crimson-pink.

Calyx.—Sepals five, ovate, acute.

Corolla.—Petals five, twice as long as the sepals.

Stamens.—Five.

Pistil.—Of five carpels which ripen into many-seeded follicles, each tipped with a short style.

Live-Forever often waits at the gates of old country churchyards, wanders along fences, and establishes itself on roadsides. The plant is well known to country children of New England and the Middle States. It appears in tufts of many upright stems bearing coarse,

fleshy leaves which possess the peculiar property of separating the upper from the lower skin when subjected to pressure. After children have accomplished this with their fingers they blow up the leaves into tiny bladders.

In its wandering life the plant rarely blooms; indeed, it is a childish tradition that it never blooms, and as the plant roots at the joints it has little need for seeds.

During later years, however, the wanderer has been recalled to the garden and now appears as a border plant blooming profusely.

ROSÀCEÆ—ROSE FAMILY

DALIBARDA

Dalibârda rèpens

Dalibarda, named in honor of Dalibard, a French botanist.

A native woodland plant, preferring the mountains, and blooming from June to September. Nova Scotia to Pennsylvania and westward.

Stem.—Slender, creeping, smooth.

Leaves.—Long-petioled, in tufts from the running stem, circular, heart-shaped at base, crenate at margin, hairy above and beneath.

Flowers.—White, solitary at the top of a scape two to five inches high, of strawberry type. Also bears cleistogamous flowers.

Calyx.—Deeply, and evenly, five or six-parted, the large divisions toothed.

Dalibarda. *Dalibârda rèpens*

Petals.—Five, white, falling early.

Stamens.—Many, filaments white, anthers pale yellow.

Pistil.—Of five to ten carpels, white.

Fruit.—Five to ten dry drupelets within the persistent calyx.

When in cool northern woods the road leads up to the hilltops there are certain shy mountain plants that venture to the roadway and look out into the open. Among them is the delicate Dalibarda, with

flowers of strawberry type, its five petals making a snowy star, whose centre, white with many stamens and white carpels, completes its beauty. It is an exquisite creature, companioned by the sturdy Wintergreen, the Bunchberry, and sometimes the creeping Partridge-Vine.

Tall Agrimony. *Agrimònia hirsùta*

TALL AGRIMONY. HAIRY AGRIMONY

Agrimònia hirsùta

Name a corruption of *Argernonia*, because for some reason it was supposed to have a value in alchemy.

Perennial. Native. A common, insignificant, long-stemmed, sprawling plant, in woods and thickets, noticeable in July, principally because of the green, bristly seed balls upon the lengthened flower-stem; the small yellow flowers are not conspicuous. New Brunswick to Minnesota, south to Carolina and Kansas. June–September.

Stem.—Three to five feet high, more or less hairy with soft, long hairs, branching.

Leaves.—Alternate, large, five to ten inches long, compounded mostly of seven leaflets, clasping the stem with leaf-like stipules. Leaflets elliptical or broadly ovate, coarsely veined, crenate-serrate, acute at apex,

rounded or wedge-shaped at base. Terminal leaflet is largest and the pairs grow smaller toward the base of the midrib. Between these pairs of leaflets are several small rudimentary leaflets in pairs or scattered.

Flowers.—Small, yellow, one-fourth to one-half an inch across, borne in long terminal or axillary racemes.

Calyx.—Top-shaped, grooved, contracted at the throat, which is beset with green, hooked bristles.

Corolla.—Petals five, yellow, small, acute.

Stamens.—Five to fifteen, filaments slender.

Pistil.—Carpels two, included; stigma two-lobed.

Fruit.—Dry, top-shaped, with many radiating hooked bristles.

Chiefly self-fertilized.

The tapering raceme of Agrimony, rising above its shapely leaves, with its nodding, urn-shaped burrs closely set along the stem, is really a graceful and interesting plant.

The small flower has five yellow petals, many orange-tipped stamens, and appears on a long, slender spike. The blossoms at the base of the flowering stems open first, and in midsummer these stems become a mass of green calyxes below, yellow flowers midway, and green buds toward the tip. At first sight one would scarcely place the Agrimony within the Rose family, yet there it properly belongs.

THREE-TOOTHED WHITE CINQUEFOIL

Potentilla tridentata. *Sibbaldiopsis tridentata*

Sibbaldiopsis in honor of Robert Sibbald, a Scotch naturalist.

A perennial plant, really a low shrub, growing on rocks and in rocky places, especially on mountains. Rocky

shores of New England, shores of Lake Superior, southward on the Alleghanies, westward to the Canadian Rockies. June–August.

Stem.—Woody at base, creeping; branches of the year erect, two to six inches high, pubescent.

Three-Toothed White Cinquefoil.
Potentilla tridentàta

Leaves.—Trifoliate, thick, dark green, shining above, pale and minutely pubescent beneath; leaflets three, wedge-shaped; midrib depressed, margin entire, apex three-toothed; stipules lanceolate, entire.

Flowers.—White, of strawberry type, borne on stems four to six inches high in loose, irregular cymose panicles.

Calyx.—Five-lobed, lobes ovate, acute, bractlets five, shorter than calyx-lobes and narrower.

Corolla.—Petals five, obovate, white.

Stamens.—About twenty; filaments white, threadlike; anthers dark, small.

Pistil.—Of many carpels; ripening into hairy akenes.

This tiny alpine plant, nestling in rocky places, marking the seams of granite rocks where a little earth has collected, with shining leaves and in midsummer with a wealth of starry white flowers, is a characteristic growth on the rocks of New England and is especially abundant at Gloucester.

At the point where stem and root meet, the stem

is woody, hence the plant technically is a shrub. The barren stems are from two to three inches high, the fertile and flowering ones three to six.

The little white flower is of the strawberry type, but like all the Potentillas its fruit is a cluster of hard akenes instead of the strawberry. The plant may be easily recognized by its three-parted shining leaves.

AMERICAN GREAT BURNET

Potérium Canadénse. Sanguisórba Canadénsis

Sanguisorba, Latin, blood-stanching, from its supposed properties.

Perennial. Native. A tall, showy plant bearing long, stalked spikes of feathery white flowers; found in swamps and wet meadows, especially near the sea. Newfoundland to Georgia and west to Michigan. July–September.

Stem.—Two to six feet high, smooth or slightly hairy, erect, branching.

Leaves.—Alternate, odd-pinnate, with leafy stipules. Basal leaves long-petioled; leaflets seven to fifteen, one to three inches long, ovate, oblong or oval, serrate, stalked.

Flowers.—White, perfect, in dense terminal spikes.

Calyx.—Tubular, top-shaped, constricted at the throat, persistent, four-lobed; the lobes petaloid and deciduous.

Corolla.—Wanting.

Stamens.—Four, inserted on the throat of the calyx; filaments threadlike, exserted; anthers short.

Pistil.—Ovary one, style threadlike.

Fruit.—Akene enclosed in a four-angled calyx.

The conspicuous spires of Great Burnet appear in swamps and wet meadows, especially near the Atlantic coast.

The plant is tall, with compound foliage and many florets crowded on a terminal spike. These owe their fluffy appearance to the long, white stamens, of which each floret has four.

CÆSALPINIÀCEÆ—SENNA FAMILY

PARTRIDGE-PEA. SENSITIVE PEA

Cássia chamæcrista

An annual native plant, bearing leaves of many leaflets which are sensitive. In dry soils Maine to Florida west to South Dakota. July–September.

Partridge-Pea. *Cássia chamæcrista*

Stem.—Widely branched.

Leaves.—Compound, alternate, petioled, with a cup-shaped gland on the petiole, sensitive; leaflets twenty to thirty, linear-oblong or lanceolate, obtuse, mucronate, oblique at the base. Stipules awl-shaped, persistent.

Flowers.—Two to four together in the axils of the leaves, yellow; showy.

Calyx.—Tubular, five-toothed.

Corolla.—Petals five, orange-yellow, obovate, two and sometimes three with a purple spot at base.

Stamens.—Ten, anthers elongated.

Pistil.—Ovary hairy; style smooth.

Fruit.—Pod, two inches long, and about one-third of an inch wide.

The Partridge-Pea changes the position of its leaflets at night, and also by day when roughly treated. The ten or more pairs of leaflets slowly turn their outer edges uppermost after sunset. The flowers are a brilliant yellow, large, but only four of the petals expand fully.

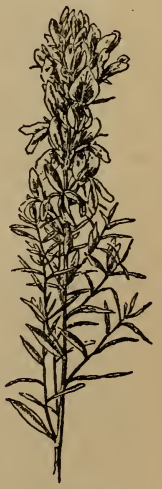
PAPILIONÀCEÆ—PEA FAMILY

WOADWAXEN. DYER'S GREENWEED

Genista tinctòria

Genista is Celtic for small shrub.

A low, branching, woody plant, one to two feet high, with creeping rootstalks and upright branches. Naturalized from Europe. Found on dry hills from Maine to New York, where it becomes a troublesome weed.



Woadwaxen.
Genista tinctòria

Leaves.—Alternate, one-foliate, sessile, elliptical or lanceolate, an inch or an inch and a half long, narrowed at base, entire, acute; bright, shining green.

Flowers.—Papilionaceous, borne in many short, few-flowered terminal racemes.

Corolla.—Clear, bright yellow, without markings. Pod an inch long, smooth.

In *Garden and Forest* of August, 1888, is given the following account of *Genista tinctoria:* "In some parts of Essex County, Massachusetts, it has become thoroughly naturalized, and has taken possession of thousands of acres of rocky upland from which it is practically impossible to exterminate it, and which is thus ruined for pasturage or for tillage. These hills, when the Woadwaxen is in flower, seem to be covered with a golden carpet and present an ap-

pearance quite unlike anything which can be seen in any other part of the United States."

The leaf of this plant is a sort of botanical puzzle, it is called a compound leaf of a single leaflet, which seems a contradiction in terms. But if you look at this petiole under a glass, it is very clear that there is a joint, and this indicates that the leaf is indeed compound, but that all the leaflets have aborted save one.

CLOVER

Trifolium

Trifolium, Latin, referring to the three leaflets.

A genus of herbs, most abundant in the north temperate zone, containing, according to records, about two hundred and fifty species. With us a half-dozen of these are in bloom all summer. Three are very generally known.

Roots.—Fibrous tap-roots, supporting bacteria which are capable of fixing the nitrogen of the atmosphere.

Leaves.—Alternate, three-foliate; stipules grown fast to the petiole. All Clover-leaves change position more or less at night.

Flowers.—Of papilionaceous type borne in dense heads. Standard, wings, and keel of each floret are grown together by claws into a tube and this unites with the stamen tube.

Calyx.—Tube with five, nearly equal teeth, hairy.

Corolla.—Papilionaceous, persistent; turns brown, but remains.

Stamens.—Ten in two groups—nine and one. The single stamen often separates for only half its length.

Red, White, Alsike, and Yellow Clover

Pistil.—Ovary one, developing into a pod producing one to six seeds.

Pollinated by bees. Nectar-bearing. Stamens mature before the stigma.

The Clovers share with the Buttercup and the Daisy in the homely regard of the northern races. Two, the White and the Red, are the ones ordinarily meant when we speak of Clovers, but there are others. The Alsike, a pink hybrid, has joined their number in popular favor. A tall, stout species developed from the Red is sometimes found climbing the fence with a zigzag stem five feet high. The Yellow Clover at times takes possession of long reaches of upland roadsides in New York and New England. Two tiny Hop-Clovers with small yellow flowers run along the roadsides in among low grass and weeds. Rabbit-Foot Clover at first seems quite different from the others but in the last analysis it is seen to be very similar. All the Clovers are persistent bloomers; several appear among the early spring flowers and continue with varied fortunes until November cold ends their career.

Clovers are distinctly bee blossoms; the Common Red Clover is the particular preserve of the bumblebee and so specialized has it become that, deprived of its efficient assistant, no seeds can be produced. This was made clearly apparent by the experience of the Australian farmers who were obliged to import bumblebees in order that their Clover fields should produce seed.

Consider for a moment a Red Clover head! A ball of thirty to forty small Pea flowers set in a miniature forest of upstanding points, hairy as a defense against ants. Nothing bothers ants like hairs, and no visitors

are more unwelcome, for while they eat they do not pay since the ant cannot pollinate the stigma of a flower. That the pubescence of the vegetable world is to some extent a reaction against crawling creatures, largely ants, seems fairly clear. There are other uses for the many hairs; doubtless protection against too sudden changes of temperature, but the enemy from which the flower must be protected is the ant.

These small blossoms are Pea flowers, but not exactly like those of the Pea or the Bean. All the parts—the standard, the wings, the keel—all are there, but grown together at the base by claws which form a tube that secretes nectar. The deep tube of the Red Clover gives its store to the bumblebee, who alone of the family has a proboscis long enough to reach it; but even the bumblebee sometimes falls short of its duty and bites through the tube, thus gaining the sweets by another and unlawful way. The Red Clover is a short-lived perennial.

And the White Clover! Everywhere; in fields, in the lawns, by the roadside, springing up in garden-beds, an indigenous, naturalized, ubiquitous little creature, coming, going, creeping, waiting—omnipresent and universal. Its tiny white flower-balls nestle among the grass of three continents; it forms great beds here and there; it comforts the honey bee. Its running stem wanders at will, roots at the nodes, sends up along its length upright stems—some bearing leaves and some flowers. It is a perennial of long life. Put to bed at nightfall by nature herself, it conserves the warmth of its body through the night, thus hinting of a northern origin. The flower-head separates its florets into groups, the present and fu-

ture, with the past folded away. Equipped for life, it lives.

The Alsike is the beauty of the family. A late comer, a hybrid believed to be the product of the union of Red and White, it retains the stem system of the Red in a more delicate form and the flower-head of the White in pinker color. Alsike is the name of a town in Sweden, the Clover is often called Swedish Clover. It was brought to this country to be used on sick soil, cold wet lowlands, and was satisfactory there, but the plant has disregarded meadow bounds and has gone gypsying to the highways on its own account. It has entered the city enclosures, and in neglected suburbs may often be seen flourishing contentedly between the curb and the sidewalk. It, too, is a perennial.

YELLOW CLOVER

Trifòlium aurèum

Annual. Naturalized from Europe. Along roadsides and waste places. Nova Scotia to Virginia and westward. May–September.

Stems.—Six to eighteen inches high, slender and leafy, more or less hairy. Growing in tufts and forming a large, loose, spreading group of flowering stems.

Leaves.—Alternate, compound, petioled; stipules acuminate and joined to the petiole for about one-half their length. Leaflets three, sessile, delicate, obovate, finely denticulate, narrowed at the base, rounded or notched at the apex.

Flowers.—Papilionaceous, golden yellow, in a many-flowered, oblong head, after fertilization reflexed. Standard, wings, and keel grown together; standard conspicuously straight, drying pale brown. Pod one-seeded.

Yellow Clover is a very dainty and interesting plant, coming to us, like so many of our Clovers, from Europe and dwelling upon our highways because it has no other home. It is to be looked for in sandy places which run up a little slope, though on the uplands of New England it often takes possession of long stretches of the roadside almost to the exclusion of other plants. The books give it a certain forage value, but undoubtedly there are better Clovers. At any rate, it is not in cultivation. It is a true Clover, having a butterfly blossom, with standard, wings, and keel grown together, the standard outshowing all the others, and in this case really making most of the blossom.

Yellow Clover. *Trifòlium aurèum*

The flowering head is oblong, a beautiful golden yellow, densely crowded with tiny florets arranged alternately. As the blossoms mature and dry the head takes on the likeness of a small Hop.

RABBIT-FOOT CLOVER. OLD FIELD CLOVER. PUSSY-TOED CLOVER

Trifòlium arvénse

Annual. Naturalized from Europe, but native to northern Asia. In fields, roadsides, and waste places, growing in colonies and giving a soft gray cover to the land. Throughout eastern North America. June–August.

Stem.—Six inches to a foot high, erect, slender, branched, leafy, covered with fine, silky, gray hair.

Leaves.—Compound, alternate, three-foliate; with short petioles and narrow stipules. Leaflets linear or oblanceolate, entire, obtuse at apex and narrowed at base.

Flower-heads.—Terminal, peduncled, oblong, or cylindric, one-half to one inch long, very dense; calyx very silky. Flowers papilionaceous, minute, white or pinkish, much shorter than the calyx, which extends in five, slender, red threads thickly fringed with silky gray or pale reddish hairs. Fragrant.

Fruit.—Pods small, containing one or two minute seeds.

Rabbit-Foot Clover. *Trifolium arvense*

The Rabbit-Foot or Pussy-Toed Clover has soft hairy flower-heads which, when drawn through the hand, suggest the soft paws of kitten or rabbit. The stem and leaves are more or less covered with long, silky hairs, but the longest, softest, and silkiest are on the calyxes of the minute, pale pink florets that are crowded into the head. Most of the Clovers of midsummer are the Clovers of spring that have wandered into the summer, or seedlings ready to produce their best bloom in autumn, but this is a summer flower. The plant grows from six to eighteen inches high, and

every branching joint of stalk and stem is sheathed with a stipule having a pair of long, curving, needle-like points; the three soft, thin leaflets which form the compound leaf flare from a very short petiole.

The cylindrical flower-heads at close range are of exquisite beauty. Their color is gray-green flushed with pink, supported and enveloped by the delicate gray-green foliage which gives them a background. The long hairs, white or pink, throw such a shimmer over all that the colors are elusive, changing with the light; and so soft, so velvety, so altogether adorable are they that one wonders such little gray heads can hold so much beauty.

Sweet Clover.
Melilòtus álba

SWEET CLOVER

Melilòtus álba

Melilotus, Greek, a honey-bearing plant.

Biennial. Naturalized from Europe. Growing along roadsides and in waste places. Cultivated under the name of Bokhara Clover. Everywhere. June–October.

Stem.—Erect, three to six feet high.

Leaves.—Alternate, pinnately three-foliate; leaflets oblong or slightly oblanceolate, finely serrate, notched or rounded at apex.

Flowers.—White, papilionaceous, borne in slender racemes, two to six inches long; racemes often one-sided.

Pod.—Ovoid, wrinkled, one to two-seeded.

From many points of view Sweet Clover is a weed; it no longer adorns the garden, but lives on the roadside, loiters along the railroad track, and romps over waste places. The bees love its tiny blossoms, heavy with nectar, and never forsake them so long as there is enough daylight left for wanderers to wing their way homeward. The plant once had a place among sweet herbs, because its leaves are fragrant in drying. Sweet Clover in mass is beautiful especially when with leaf and flower it covers waste places.

Yellow Sweet Clover, *Melilòtus officinàlis* resembles its White brother and appears with it. The chief difference is the color of the blossom, though in some quarters *officinàlis* blooms earlier.

CORONILLA. CLOVER-HEADED VETCH

Coronilla vària

Coronilla, little crown.

Perennial. Naturalized from Europe. New England, New York, and New Jersey. June–August.

Coronilla. *Coronilla vària*

Stem.—Straggling, creeping, and climbing.

Leaves.—Alternate, odd-pinnate; leaflets eleven to twenty-five, oblong or obovate, obtuse and muconate at apex.

Flowers.—Papilionaceous, pink and white, or pale purple, borne in little heads.

Calyx.—Small; teeth nearly equal.

Corolla.—Standard nearly orbicular; wing obliquely obovate; keel incurved, beaked.

Stamens.—Diadelphous, nine and one; anthers all alike. Pod jointed.

The dainty trailing Coronilla, an escape from early gardens, has established itself upon mountain roadsides in both New York and New England, and displays a very beautiful array of pink and white balls upon the surface of a matted bed of pale green vetch-like leaves.

SHOWY TICK-TREFOIL. CANADIAN TICK-TREFOIL

Meibòmia Canadénsis. Desmòdium Canadénsis

Meibomia, in honor of Dr. Brandus Meibom. *Desmodium* from *desmos*, Greek, a bond or chain, in allusion to the jointed pods.

Perennial. Native. The most showy plant of the Tick-Trefoil group, with many Pea-like rose-purple blossoms, crowded in racemes which either terminate the tall, stout, leafy stem or are borne on stems springing from the axils of its upper leaves. Thickets and river banks or banks of lakes and ponds. New Brunswick to Manitoba, south to North Carolina and Missouri. July–September.

Stem.—Erect, stout, hairy, leafy, two to four feet high.

Leaves.—Crowded on the stem, three-foliate, the lower leaves petioled, the upper nearly sessile. Leaflets oblong-ovate or lanceolate; apex obtuse with a little spiny point, margin entire. Stipules linear, pointed, very small, mostly persistent.

Flowers.—Papilionaceous, about three-fourths of an inch long, crowded on terminal or axillary racemes, conspicuous, rose-purple.

Calyx.—Tube short, somewhat two-lipped, reddish.

Corolla.—Standard ovate; wings obliquely oblong; keel obtuse.

Stamens.—Ten, diadelphous; nine with filaments grown together, one by itself; anthers all alike.

Pistil.—Ovary one; style one.

Fruit.—Loment, that is, a jointed pod, one to four inches long, dividing into three to five joints; each joint triangular, straight, or convex on the back, covered with small hooked hairs.

Pollinated by bees. Nectar-bearing.

Tick-Trefoil. *Desmodium Canadensis*

The Tick-Trefoil may escape us in the summer, but we assuredly cannot escape it in the autumn. In midsummer—its long, dense racemes of rose-purple Pea-like blossoms waving from the top and sides of a stout, leafy stem—the plant attracts attention as a bit of brilliant color by the wayside. One plucks a stem with a certain pleasure—it is showy, strong, conspicuous, the flowers in color beautiful. One wonders if it might not serve in some landscape gardening to brighten a dull place or comfort a desolation. This in summer is the Tick-Trefoil, but in autumn, when the last little butterfly blossom has poised on the tip of each stem and the trail of pods has followed the bloom, when the leaves have colored to red and yellow and deepened to brown, then comes the time of retrospection and regret that you did not choke the plant in its prime. For that divided pod breaks up into thin segments so covered with hooked prickles, so determined to seize

and hold, that the slightest touch dislodges them and one finds one's garments covered with a coat of mail, green or brown, in return for having ventured into apparently innocent places. It is by way of the pods that madness lies.

Thoreau writes of them: "Though you were running for your life, they would have time to catch and cling to your clothes. These almost invisible nets, as it were, are spread for us, and whole coveys of Desmodium and Bidens seeds steal transportation from us. I have found myself often covered, as it were, with an imbricated coat of the Brown Desmodium seeds or a bristling chevaux-de-frise of Beggar-Ticks, and had to spend a quarter of an hour or more picking them off in some convenient spot, and so they get just what they wanted—deposited in another place."

Blooming at the same time and often alongside is *Desmòdium nudiflorum*, the Naked-stemmed Tick-Trefoil which carries on its flowering stem a single trifoliate leaf at the base. This flowering stem is strung with rose-pink, Pea-like flowers in pairs, one opening quite a little earlier than the other and each producing one of the detestable pods of the clan.

BUSH-CLOVER

Lespedèza violàcea

Named for Lespedez, governor of Florida, patron of Michaux.

Perennial. A native herb, often woody; in dry soil, pastures and thin meadows. New England to Minnesota, south to Florida and Kansas. July–September.

Stems.—Somewhat woody, much branched, one to three feet high. Profusely flowering.

Leaves.—Alternate, pinnate, three-foliate, small stipules. Leaflets oval, elliptic or elliptic-oblong, thin, obtuse, entire.

Flowers.—Papilionaceous, small, in loose paniculate clusters in the axils of the leaves, violet-purple.

Calyx.—Bell-shaped, five-lobed, lobes nearly equal.

Corolla.—Standard obovate; wings oblong; keel incurved.

Stamens.—Diadelphous; nine to one.

Pistil.—Ovary ovate, or oval.

Pod.—Ovate or oval, flat, one-seeded.

Bush-Clovers. *Lespedèza violàcea. Lespedèza angustifòlia*

The Bush-Clover dwells of choice in dry soils and is often found growing on an upslope from the roadway. It is a profuse bloomer, and its flowers though small are so brilliantly colored and borne so abundantly as to make a decided and pleasing color.

Lespedèza angustifòlia, the Narrow-leaved Bush-Clover is often found in company with *violàcea*. The plants are similar in general appearance; both flower profusely, the chief difference between them lies in their leaves.

APIOS. GROUNDNUT. WILD BEAN

Ápios tuberòsa

Apios, Greek, pear, from the shape of the tuber.

Native. A twining perennial vine, found in moist ground, with pinnately compound leaves; bearing axillary racemes of brownish red, Pea-like, fragrant flowers. New Brunswick to Ontario and Minnesota. July–October.

Root.—Tuberous, pear-shaped, edible.

Stem.—Slender, twining, with milky juice.

Leaves.—Alternate, petioled, pinnately compound. Leaflets five to seven, ovate to ovate-lanceolate, acute at apex, rounded at base, margin entire.

Flowers.—Papilionaceous, pale brownish red, densely crowded in a rounded or lengthened raceme, two to three inches long, borne solitary in the axils of the leaves. Fragrant. Racemes often compound.

Calyx.—Small, campanulate, somewhat two-lipped. Two side teeth small, two upper united and short; the lower long, acute.

Corolla.—Standard orbicular, spreading. Wings obliquely obovate, adherent to the keel which is long, incurved, scythe-shaped.

Stamens.—Diadelphous, nine and one.

Pistil.—Ovary linear; style slender; ovules many.

Fruit.—Pointed pod, one to three inches long.

This blooming vine, hiding among the bushes of a wayside thicket, twining around a stem of Goldenrod or Evening Primrose, trailing on the ground when nothing better offers, may often when in full bloom be discovered by the fragrance alone.

The flowering raceme is most interesting. In the

first place the color is unusual. The books describe the flowers as brownish or chocolate-red, but words convey but little idea of the dull, deep, lurid hue of the inner part of the standard and wings, or the curious red, dusted with gray, of the exterior. The crowded racemes are borne in the axils of the leaves and are from two to three inches long, sometimes the raceme is compound.

Leaf of Apios. *Apios tuberosa*

The standard is the most conspicuous part of the flower, orbicular, spreading, slightly incurved. At the top is a little pocket into which the recurved and sometimes twisted keel thrusts its tip, so that a front view of each individual blossom shows a triangular, cuplike standard and a stiff, whitish keel curving outward and then inward with two flaring wings at its base.

The pear-shaped tuber at the root is responsible for the plant's names. Evidently it develops tubers at the expense of seeds, for the pod frequently does not form and when formed often fails to reach maturity. There is a tradition that the early settlers of this country used these tubers as food—having learned their value from the Indians.

GERANIACEÆ—GERANIUM FAMILY

HERB ROBERT. RED ROBIN

Gerànium robertiànum

Geranium, a crane, from the long beak of the fruiting capsule.

Herb Robert is a wild Geranium, naturalized from Europe and found oftenest climbing over rocks or dwelling at ease either in the open or on the borders of rocky woodlands. Annual or biennial.

Stem.—Hairy, weak, extensively branching, both green and ruddy in color, heavily scented when bruised.

Leaves.—Ovate-orbicular in outline, divided into three to five divisions. Divisions lobed and toothed.

Flowers.—Small, rose-pink, borne in terminal or axillary one to two-flowered peduncles, about half an inch across.

Calyx.—Sepals five, acuminate and awn-pointed, imbricate in bud.

Corolla.—Petals five, imbricate in bud, broadly ovate, narrow-clawed, rose-pink with darker lines.

Stamens.—Ten, in two sets; one set maturing earlier than the other.

Pistil.—Ovary five-celled, five-lobed, beaked with a compound style.

Fruit.—Capsule, the five cavities one-seeded and long-tailed by the persistent style divisions. Splits apart elastically and throws the seeds.

One often sees in midsummer, standing beside or sprawling over rocks, sometimes in shade and often

in full sunlight, a plant with rather large, divided and decorative leaves, small rose-pink flowers, and the entire plant—stem and leaves and fruit—more or less suffused with red. This is Herb Robert, a naturalized

Herb Robert. *Gerànium robertiànum*

Geranium, which has made its way from the Atlantic coast half across the continent.

Its common name, Herb Robert, is a puzzle to botanists. There are tales of its efficiency as a medicine for Robert, Duke of Normandy, also that it was at one time dedicated to a saint, but Edward Step in "Romance of Wild Flowers" explains the name Robert as an example of interchange of meaning. He says the redness of the plant caused the country people to give it the name Robwort, that is, Redwort, and in course of time the "w" disappeared in pronunciation, leaving it Rob'ort to puzzle a later generation who spelled it Robert and wondered if

ever the plant had been dedicated to a St. Robert. Linnæus regarded this Robert as a personal name and gave it a Latin termination by which the plant will doubtless always be known.

The little flower is pretty, about half an inch across, rose-pink, marked with darker lines. The cranes-bill seed-vessel clearly marks its family affiliations, and it sends its seeds away a little more strenuously than the other species of the genus. The books give it to shaded woodlands, but along the shores of the Great Lakes it loves to live on rocks and bask in the sunshine. It is a citizen of the world and dwells in three continents—America, Europe, and Asia.

POLYGALÀCEÆ—MILKWORT FAMILY

PURPLE MILKWORT. ROSE POLYGALA

Polýgala sanguinea. Polýgala viridéscens

Annual or biennial. Moist meadows and sandy places. Often growing in sufficient numbers to cover a field. Nova Scotia to North Carolina and Louisiana west to Minnesota and Kansas. July–September.

Stem.—Erect, angular, and slightly winged, eight to twelve inches high, branching or simple.

Leaves.—Alternate, linear, or narrow oblong.

Flowers.—Usually rose-purple, in ovoid to globose-compact terminal spikes or heads. Sometimes green, rarely white.

Calyx.—Of five irregular sepals; three small, two lateral ones much larger and called wings. These are broad ovate and resemble petals; are dilated at the base, rose-color and green, longer than the fruit.

Corolla.—Of three petals, their claws cohering to the stamen tube, the lowest one larger than others and called the keel.

Stamens.—Six or eight, filaments united into a tube which is split on the upper side.

Pistil.—Ovary two-celled; style dilated in the middle, hooded and bearded.

Fruit.—Capsule compressed. Seeds grayish black, hairy.

A field of Rose Polygala suggests a field of Red Clover, the individual flower-head is in appearance not unlike a Clover head. The curious thing about the flower is that two of the sepals look like petals.

ANACARDIÀCEÆ—SUMAC FAMILY

THE POISON IVIES

Rhus microcárpa. Rhus toxicodéndron. Rhus radìcans

Two plants now known as *Rhus microcárpa* and *Rhus radìcans* were formerly considered as a single species and very generally described under the name *Rhus toxicodéndron*, which name is now given to a third species of southern habitat. As a result the amateur and the layman find themselves considerably confused when they consult the talent.

But the main facts in the matter still stand clear. Both are plants poisonous to the touch, and to many persons the neighborhood of the plants is dangerous. Both have compound leaves of *three leaflets*, not five like the Virginia Creeper, nor seven to nine like the Bittersweet. There are always *three leaflets*, there are never any more. The specific differences are largely those of habit of growth, the blossoms and the fruit are virtually the same in both.

Rhus microcarpa, the common roadside Poison Ivy, is the running vine so abundant in fields and by the roadsides. The hairy stem often trails upon or just under the ground and sends up erect branchlets six to eight inches high which make a low thicket; sometimes the entire plant is erect but low.

Rhus radicans is a woody, hairy vine climbing by numerous dark-colored aerial rootlets, the stems sometimes an inch or more in diameter. It climbs fence posts especially, and often trees, now and then

Poison Ivy Climbing Tree-Trunks. *Rhus radicans*

one comes upon a grove of trees sorely beset with this poisonous pest. Sometimes Poison Ivy and Virginia Creeper climb adjoining trees. But the Creeper has five leaflets and is benign, the Ivy has three and is malignant. Shun the vine with a hairy, woody stem and leaves of *three leaflets*.

These leaflets are ovate or rhombic, entire or coarsely and sparingly serrate, acute or acuminate, sometimes lobed. They are more or less variable, but the main and central fact is that there are always three of them, the lateral ones sessile, the terminal one on a short petiole.

The flowers of Poison Ivy are small, polygamous, yellowish green, made on the plan of five. Five sepals, five petals, five stamens, styles three. They are borne in loose, axillary clusters. Fruit a dry drupe, the size of a small pea, smooth, greenish, gray-white, or pale brown.

These plants should be exterminated root and branch, but instead of that they are increasing. This is largely due to the immunity they enjoy because people are afraid to touch them, but in winter they could be easily and more safely destroyed; destroyed they certainly should be. The poison is an acrid oil which is easily liberated from the leaf tissue, and quickly permeates the skin of its victim, spreading its irritation on the surface. Water will avail little in removing it; alcohol is much better. Some persons are immune to the poison, others are affected by nearness alone.

BALSAMINÀCEÆ—JEWEL-WEED FAMILY

GOLDEN JEWEL-WEED. TOUCH-ME-NOT

Impàtiens fúlva. Impàtiens biflòra

Impatiens, in allusion to the elastically bursting pods.

An annual, native plant that grows in luxuriant profusion in shaded places along water-courses and in any moist, well shaded area. The flowers are curious, swinging cornucopias with slender, recurved, little tails. Nova Scotia to Alaska, south to Florida and Missouri. July–October.

Roots.—Small and spreading, close to the surface.

Stem.—Two to four feet high, pale green, often tinged with red; smooth, hollow, translucent and watery, swollen at the joints. Outer covering is a smooth, silken skin which may be readily stripped off.

Leaves.—Alternate, petioled, ovate; crenate-serrate margin, soft green, rather thin; midrib prominent.

Flowers.—Of two sorts, the larger ones of singular shape; the general outline is that of a horizontal cornucopia, which tapers to a very slender recurved spur and which is orange-yellow, more or less speckled with reddish brown spots. Smaller flowers are cleistogamous, self-fertilized in the bud, whose floral envelopes never expand but are forced off by the growing pod.

Calyx.—Of three sepals, the two lateral ones small, green, nerved; the third, large, yellow, saccate, spurred.

Corolla.—Petals five, or three, with two of them two-cleft into dissimilar lobes, probably made up of a pair united.

Stamens.—Five, short; filaments appendaged with a scale on the inner side, and the scales united over the stigma; anthers open on the inner face.

Pistil.—Ovary oblong, five-celled; stigma sessile.

Fruit.—A pod with disappearing partitions and a thick axis bearing several seeds. When the pod opens its five divisions recoil elastically and project the seeds.

Fertilized by bees and butterflies. Nectar-bearing.

Golden Jewel-weed. *Impàtiens fúlva*

Jewel-weed is not badly named, for each solitary flower hangs like a jewelled cornucopia or trumpet from the tip of branch or branchlet. It loves shade and ordinarily is found only in shaded places, but the personal experience of once finding a golden plant about three feet high, with flowers so abundant as to overpower the leaves and standing in full sunlight by a high mountain stream, emphasizes the fact that there are exceptions to all rules.

Country children love to plunge the leaves beneath clear water where they take on the appearance of burnished silver, and when removed no drop remains upon the surface.

The blossom is one of the most singular in our flora, red gold or pale gold and of a design so rare that it is difficult to describe. One of the sepals has developed into a cornucopia with the small end doubled up into a little spur. Three other parts are fully in evidence: one is a hood, and the others, which are cleft, twist and

flare outward and downward at the sides of the cornucopia like wings. These are profusely speckled with reddish brown dots; there are dots elsewhere, but not so many. The flowers dangle on slender stems and sway and nod and swing with every breeze, but when picked perish at once.

The ripe seed-pods recoil from one's touch with a quick, petulant motion. They are plump and look so contented that one would not suspect them of such impatience, but as a matter of fact they are extremely sensitive, and at a certain point of maturity they apparently resent the slightest pressure, snap inside out upon the least provocation or upon none at all, and the elastic coil of the outer coat shoots the liberated seeds hither and yon—one of nature's ways of forcing the children to leave home!

Two species are common: *Impàtiens fúlva*, Golden Jewel-weed, a red-orange color, thickly spotted with reddish brown; the other, *Impàtiens pallida*, bears pale yellow blossoms, sparingly dotted with dull red and with a short spur. The two species are found together or near neighbors. The root systems of both species seem scarcely sufficient to anchor their tall, spreading stems, and possibly because of this the plant is always found in colonies, each individual helping and being helped by its neighbor.

It may not be generally known that the macerated stems of Jewel-weed are used as a country remedy for the eruption caused by Poison Ivy and has been reported to me as virtually a specific remedy. Glass-weed is one of the common names of the plant in Virginia and used by those who utilize its healing properties.

VITÀCEÆ—GRAPE FAMILY

FOX-GRAPE. RIVERSIDE GRAPE. FROST-GRAPE

Vitis vulpìna

Vitis, the ancient name of the vine.

The Riverside is the commonest grape of the Northern States west of New England; abundant along streams; frequently destroys shrubs and low trees. Variable in the shape of its leaves and in the flavor and maturity of its fruit.

Stem.—Vigorous, tall-climbing with bright green foliage; young shoots normally glabrous; stipules large; tendrils forked and coiling; nodes solid.

Leaves.—Thin, medium to large, cordate, or ovate with a broad sinus at base, sometimes three-lobed, sometimes deeply cut, and sometimes just coarsely serrate, apex acute, generally glabrous, but veins and their angles often pubescent.

Flowers.—Small, greenish, dicœcious or polygamo-dicœcious, borne in compound racemes; fragrant.

Calyx.—Minute, five-lobed.

Petals.—Five, cohering at the tips and falling without expanding.

Stamens.—Five, alternating with nectiferous glands; stamens of fertile flowers curved; of sterile flowers erect.

Pistil.—Globular, two-celled; style short.

Fruit.—Berries, small, one-fourth to three-eighths of an inch in diameter, purple-black with a heavy blue bloom, sweetish, generally ripening late; seeds rather small and distinctly pyriform.

The Riverside Grape is well known to all who live in the Middle West, for it festoons the thickets on the river banks, where it often takes entire possession of a tree; it clambers over the fences along the roadway, and is probably the most wide-spread of America's native Grapes. The leaves are medium to large, cordate-ovate, mostly showing a tendency to three lobes, more or less deep; the margins variously toothed and cut. The fruit clusters are much branched and often compound. The Clinton Grape is referred to the Riverside Grape.

Riverside Grape. *Vitis vulpina*

The Frost-Grape, *vitis cordifolia*, is a vine of luxuriant growth found in moist thickets and along streams. Stem smooth, tendrils forked and intermittent. Berries, black and shining, ripening after the frost. Often called in the country Chicken Grape, because the berries are sought by chickens when the plant grows about the farmhouse.

NORTHERN FOX-GRAPE

Vitis labrusca

One of our common wild Grapes and the parent of the Concord and other cultivated varieties. Found in thickets on moist ground in New England, eastern New York, and southward to Georgia and Tennessee. Blooms in May and June and fruits in August and September.

Stem.—Woody, climbing by tendrils, with watery and acid juice; bark loose and shreddy; young shoots

very cottony; nodes solid, interrupting the pith; tendrils forked.

Leaves.—Alternate, rusty-brown and woolly beneath, cordate, rounded, palmately veined, varying from merely dentate to deeply lobed with rounded sinuses; opposite each leaf is a tendril or a flower cluster.

Flowers.—Greenish, small, diœcious, or polygamo-diœcious, borne in a compact cluster.

Calyx.—Minute, obscurely five-toothed.

Petals.—Five, cohering at the tips, and falling without expanding.

Stamens.—Five, alternate with five nectar-bearing disks.

Pistil.—Globular, two-celled, style short.

Fruit.—Berries, few, two-thirds of an inch in diameter, purplish black with a bluish bloom, tough skin and musky flavor; seeds pyriform.

The Northern Fox-Grape is the common wild Grape of New England and eastern New York, and has a well-merited claim upon our attention as the parent of the Isabella, Concord, and Catawba—in fact, of most of the American cultivated Grapes of the Northern States. The vine is strong, robust, climbing high in thickets and on trees; the young shoots are tawny with much scurfy down; the leaves are large and thick and broadly cordate-ovate; they vary considerably as to lobes and margin, but underneath are densely covered with a tawny, dun-colored or red-brown tomentum. This characteristic persists in many of the cultivated varieties.

The blossoms are both fertile and sterile upon the same plant; the corolla never opens, the small greenish petals grow together at the tip and fall without separating. The perfume of the blossoming Grape is

subtle and delicious, as all who have Grape-vines know. The fruiting raceme carries fewer than twenty berries in the wild type; the berries, large and nearly spherical, range from purple-black, the common color, to reddish brown and amber-green; are variable in taste but mostly sweetish, musky, and sometimes slightly astringent.

VIRGINIA CREEPER

Ampelópsis quinquefólia. Parthenocìssus quinquefólia

Ampelopsis, Greek, like a vine.

The familiar creeping, trailing, and climbing vine, common in its wild state in open woods and wayside thickets, from Maine to the Dakotas and southward, may be recognized by its leaf of five leaflets.

Stem.—Climbing both by tendrils and by aerial roots.

Leaves.—Alternate, digitately compound; leaflets five, elliptic or oblong-ovate, coarsely serrate.

Flowers.—Small, greenish, perfect or diœcious, borne in loose flat clusters.

Calyx.—Minute.

Corolla.—Of five petals; spreading.

Stamens.—Five.

Pistil.—Ovary two-celled, style short, thick.

Fruit.—Blue berries, two to three-seeded; borne in broad open clusters; peduncle and pedicels red.

The Virginia Creeper is, it seems to me, our most beautiful native climbing vine. In the open woods it embraces many a tree trunk; by the roadside it clambers and billows along the fences; failing support it trails over the ground. It comforts desolate places

with a wealth of sturdy growth, and its autumnal tints present a bewitching and bewildering confusion of crimson and bronze. It should never be confused with the Poison Ivies, for its compound leaf has always *five leaflets*.

The stem climbs by numerous tendrils, which sometimes merely coil, again are provided with adhering expansions at the tips, and sometimes the stem provides itself with aerial roots.

The dark blue berries are thin-fleshed and full of seeds, are borne in abundance and eaten by birds.

MALVÀCEÆ—MALLOW FAMILY

SWAMP ROSE-MALLOW

Hibiscus moscheùtos

Hibiscus, an ancient name of obscure origin.

A tall native perennial, sending up strong leafy canes each year which bear at their summit large Hollyhock-like flowers. Found in marshes, along the coast from Massachusetts to Florida and in interior marshes west to Michigan and Minnesota. July–September.

Stem.—Three to five feet high, leafy, hairy.

Leaves.—Alternate, large, ovate, sometimes three-lobed, crenate or dentate, with hairs beneath, petioled.

Flowers.—Of Hollyhock type, showy, on one-flowered peduncles, four to six inches across, rose or white, with or without a crimson eye.

Calyx.—Five-cleft, with an involucre of ten linear bractlets; not inflated in fruit.

Corolla.—Five, obovate petals, ranging in color through rose to white.

Stamens.—United into a long column, bearing anthers for much of its length.

Pistil.—Ovary five-celled; styles united, bearing in full view above the stamen column five stigmatic balls.

Fruit.—Capsule, subglobose, five-celled. Seeds several or many in each cell.

The Swamp Rose-Mallow is one of the most beautiful of our wildlings. Growing in the swampy tangle among Sedges and Cat-tails, its magnificent flowers

give an air of distinction to any group however humble the others may be.

The flower greatly resembles a Hollyhock, is in fact quite as showy, but there are not so many individuals on the stem and the scale of color is not so varied.

The blossom may always be known as *Hibiscus*, Mallow, in distinction from *Althæa*, Hollyhock, by the five threadlike styles which protrude from the column of stamens, each bearing at the tip a little stigmatic ball. This is characteristic of the genus.

The plant has been transferred to our gardens where, like many other swamp plants, it finds a congenial home. A variety called Crimson Eye, a clear white with a crimson centre, was found in a swamp in New Jersey and introduced to the trade in 1894.

Many people confound the Rose-Mallow with the Marshmallow. It is, to be sure, a marshmallow in that it grows of choice in marshy ground; but it is not the Marshmallow, *Althæa officinàlis*. That Mallow is an alien brought to our shores by chance and has found a congenial home in the marshes on our eastern seacoast from Cape Cod to Cape May. Its flowers are pink, borne in narrow racemes, and smaller than those of the Rose-Mallow. Its root is used for mucilage and is credited with medicinal value.

The following poem from *The Boston Transcript* on gathering Mallows is worth remembering:

"Past detaining lily-pads, past the ripening rushes,
Push your little boat, my lads, where the orchid blushes.
Where the stems of cardinal flare, like red rods of warning,
Where the arum, silver fair, opens to the morning.
Just beyond the cat-tails' bound, in among the sallows,
There's the spot where they are found, tall and wondrous mallows.

Rooted deep in river slime, secret, hidden long,
Give them light, and air, and time, then they bloom to song.
Leaves of maple, copper stems, buds of emerald lustre,
Like a branch of rose-lit gems how the blossoms cluster.
See the silken petals lift, pink as baby's fingers,
Crimson heart, where still a drift of silver pollen lingers.
Lads, let's leave them at their best, in their stately growing,
Where the marsh-wren builds her nest, by the river flowing.
Let no wanton fingers harsh those sweet branches sever,
Then will mallows of the marsh grow in memory ever."

RUNNING MALLOW. CHEESE FLOWER. BUTTONWEED

Málva rotundifòlia

A common winter annual or biennial weed found throughout the north, and blooming from May to December. Introduced, native to Europe and Asia; forming mats in cultivated grounds—a pest.

Root.—White, spreading, tap and strongly fibrous, deeply rooted.

Stem.—Procumbent, spreading and sprawling, one to two feet long.

Leaves.—Round kidney-shaped, one to two inches across; cordate, with five to seven shallow, dentate-crenate lobes, with finely toothed margin; long-petioled.

Flowers.—Small, Hollyhock-shape, on short pedicels in the axils of the leaves, pale pinkish blue; one-half to three-fourths of an inch across.

Calyx.—Five-cleft; subtended by three to five bractlets; lobes ovate, acute.

Corolla.—Petals five, convolute in bud, notched at the tips, thin.

Stamens.—Many, forming a central column around the pistil; united with the bases of the petals; filaments and anthers white; anthers one-celled.

Pistil.—Ovary of about fifteen carpels, rounded on the back, downy, arranged in a circle.

Fruit.—Groups of carpels.

Capable of self-fertilization. Nectar-bearing.

This is the low, spreading plant with round, dark green leaves that hugs the dooryard fence, runs along the base of the wall by the roadside, and comes into the garden when it can. It is a bad weed, for its root is coarsely fibrous, strong, and spreading and takes hold of the earth with a tremendous grip; the stems also spread so that the plant really forms a mat. Its blossom is a tiny Hollyhock—in color, what—since doctors disagree. Three botanies and the blossom lie before me as I write—one says it is pale blue, another lavender, another pink, and the blossom says, at least to me, pale blue suffused with pink and faintly lined with veinings of a deeper hue. The color of flowers is, of all colors, the most difficult to express in words, so much of it is made up of sunlight. At any rate, the flowers of this little Mallow yield a blue coloring matter, which no doubt settles the question in favor of blue by the last analysis. The round, scalloped leaves are slightly fluted by the radiating ribs and are set on long, rough, awkward petioles.

Running Mallow. *Málva rotundifólia*

The great invading root arrests the attention of the gardener, but it is the seed-vessels that attract the children and give to the plant its country names of Cheese Flower and Buttonweed. When the five-cleft calyx encloses a circle of half-grown carpels making a tiny mass that looks not unlike a miniature cheese, country children fold back the pointed divisions of the protecting calyx and, plucking the little seed-vessels, eat them with satisfaction, for they are pleasantly mucilaginous. In the children's vocabulary they are "cheeses." Such cheeses as escape capture become brown, hardened, and finally break up into fifteen or more separate carpels.

MUSKMALLOW

Málva moschàta

One of the prettiest of our garden escapes, sometimes cultivated but oftener found by the roadside. Perennial.

Stem.—One to two feet high, hairy.

Leaves.—Alternate, three to five-parted; divisions once or twice cut into slender lobes, faintly scented with musk.

Flowers.—Of Hollyhock type, pale rose or white, flat, about two inches across, in terminal and axillary clusters.

Sepals.—Five, involucre of three bracts.

Petals.—Five, obcordate, united at the base.

Stamens.—United in a long column, bearing anthers.

Pistil.—Many carpels united in a single whorl; styles many.

Occasionally by the roadside in midsummer we find in full bloom a little colony of one of the prettiest

of our garden escapes, the Muskmallow, so called because the whole plant emits a faint odor of musk. Long ago this pretty creature scaled the garden wall,

Muskmallow. *Málva moschàta*

made itself at home upon the roadside and waste places and in consequence lost caste, so that now it is rarely seen in garden enclosures, except in the wild border.

HYPERICÀCEÆ—ST. JOHN'S-WORT FAMILY

COMMON ST. JOHN'S-WORT

Hypéricum perforàtum

Ancient Greek name of obscure origin.

Perennial. Bearing terminal clusters of bright, golden-yellow flowers; appearing in neglected meadows, roadsides, and waste places in tufts or bunches. At its best from midsummer day through July. Juices acrid and bitter; a pernicious weed. Naturalized from Europe. June–September.

Stem.—Smooth, slender, branching, leafy, one to two feet high, with many barren shoots at base.

Leaves.—Opposite; sessile, oblong or linear; obtuse, with entire margins and more or less black-dotted. Also dotted with transparent specks which show when held to the light.

Flowers.—Bright yellow, five-pointed stars, in loose terminal clusters.

Calyx.—Of five sepals, lanceolate, pale green.

Corolla.—Petals five, convolute in bud, bright yellow, somewhat oblique, finely notched along one side to the tip, often with a black dot in each notch. The surface is more or less covered with tiny black specks.

Stamens.—Very many yellow stamens radiate from the three-pronged, light-green pistil, in three sets. Anthers black-dotted.

Pistil.—Ovary three-celled; styles three, separate and diverging.

Fruit.—Three-celled capsule.

St. John's-Wort forms the bunches of brilliant yellow flowers found in neglected meadows during late June and early July. These rise about to the level of the Timothy heads with which they are surrounded. The flowers are at their best then, they

Common St. John's-Wort. *Hypéricum perforàtum*

fairly tangle the sunshine in their petals; later they begin to fade, the petals wither to a rusty-brown, and as they do not drop off they mingle with the younger flowers and make the cluster unsightly.

About this plant has gathered a store of folk-lore, difficult to comprehend without knowing how and whence it came. Many virtues were attributed to it in ancient days: it restored eyesight; it cured wounds and bruises; it defended its possessor against the

wiles of evil spirits and the power of witchcraft; its presence averted the lightning. It seems to have been considered in the Middle Ages a cure-all and a save-all; and the interesting question arises, why? There is an answer. On the longest day of the year, the peoples of northern Europe from immemorial time held the great festival of Balder, the beloved—Balder, the god of the summer sunshine. On the 24th of June the church commemorates the mission and death of John the Baptist. The missionary priests from Rome christianizing the wild northern peoples found their new converts strongly attached to the old feasts and ceremonies. Rather than part with these they preferred to part with their new religion, consequently the missionaries permitted the old feasts to continue but gave them different names and newer meanings, which may or may not have been understood by their wild converts. And so it came about the two feasts were blended into one, and in northern Europe, Germany, and England, St. John's or midsummer day is still celebrated by customs which have been traced back to the old Saxon feast of the sun. The flowers once sacred to Balder are either yellow or white with sun-shaped disks and flaring rays. The Daisy was one, St. John's-Wort with its many stamens typifying the sun's rays was another—these flowers of Balder are now the flowers of St. John. Moreover, as the leaves of St. John's-Wort are frequently covered with dark red spots the fathers said that they typified the blood of the martyr. From this time forth the service of the plant began in Christian Europe, and especially on the eve of the feast of St. John was it used to ward off the efforts

of witches. When a spray of St. John's-Wort was placed above the door, along with a cross, no witch or demon could enter; moreover, obtained with certain ceremonious observances, it was thought to divine the future, presaging life or death, marriage or disaster:

> "The young maid stole through the cottage door,
> And blushed as she sought the plant of power;
> Thou silver glowworm, oh, lend me thy light,
> I must gather the mystic St. John's-wort to-night;
> The wonderful herb whose leaf shall decide
> If the coming year shall make me a bride."

St. John's-Wort is common in waste places from June to September. It is native not only to Europe but to Asia.

There are many species of St. John's-Wort, varying from small herbs to shrubs, bearing flowers from pale to copper yellow, but all distinctly marked by the family peculiarities.

LYTHRÀCEÆ—LOOSESTRIFE FAMILY

PURPLE LOOSESTRIFE

Lythrum salicària

Lythrum, Greek, gore; from the purple flowers.

Perennial. Naturalized from Europe. Found in swamps and wet places; planted about the borders of ponds.

Rootstock.—Creeping.

Stems.—Tall, slender, four-angled, three to five feet high, crowned with spikes of many bright, crimson-pink flowers.

Leaves.—Opposite or whorled in threes; sessile, lanceolate, three to five inches long; cordate or clasping at base, entire at margin.

Flowers.—Crimson-pink, crowded and whorled in an interrupted spike.

Calyx.—Tubular, many-toothed, more or less reddish.

Corolla.—Petals four to six, inserted on the calyx tube.

Stamens.—Eight to ten, inserted on the calyx tube; anthers versatile; filaments varying in three different lengths, that is, trimorphous.

Pistil.—Ovary one, two-celled; style varying in length in different blossoms, trimorphous.

Fruit.—Capsule, many-seeded.

The Purple Loosestrife came to us from Europe and has become naturalized along the Hudson River and here and there in New England. It loves to grow in masses on low marshy land and is now extensively used for waterside planting throughout the north.

The plant is famous as the one which was studied by Darwin to establish the value of what is known as trimorphic stamens, that is, stamens of three different lengths.

Purple Loosestrife. *Lỳthrum salicâria*

At the summit of the wand-like stem, in the axils of leafy bracts, are groups of bright pink-purple flowers which give the stalks a rosy, fringed appearance. Several Lythrums are in cultivation, but this is the best of them all, and is offered by the trade as *Lythrum rosèum* and often planted among shrubbery.

MELASTOMÀCEÆ—MEADOW-BEAUTY FAMILY

MEADOW-BEAUTY. DEER-GRASS. RHEXIA

Rhéxia Virgínica

A native perennial found in sandy swamps or pine barrens. Maine to Florida, westward to Illinois and Missouri. July–September.

Stems.—One to two feet high; square, more or less hairy, erect, branching.

Leaves.—Opposite; sessile, ovate or oval, acute at apex, mostly five-nerved; margins serrulate and ciliate; one to two inches long.

Flowers.—Purplish pink, an inch or more across; in terminal, showy, loose clusters.

Calyx.—Tubular, narrowest at the neck, four-lobed.

Corolla.—Petals four, obovate; slightly oblique, rounded or slightly retuse.

Stamens.—Eight, equal, in two rows; anthers recurved.

Pistil.—Ovary one, four-celled; style slender; stigma truncate.

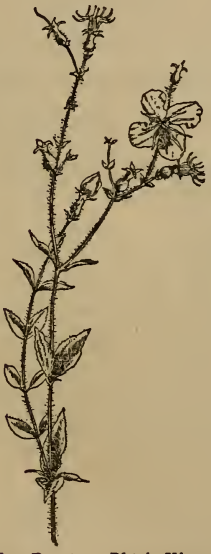
Fruit.—An urn-shaped capsule; many-seeded.

Rhexia is a plant that has developed upon the plan of four. The stem is four-square, the calyx four-lobed, the petals are four, the stamens eight in two sets, the ovary four-celled, and the seeds packed into four pockets. For some reason the vegetable world inclines toward the rule of five; for example, Roses, Pinks, Buttercups; a large contingent falls into threes, as all the Lily tribe, but not many take four and still fewer seven.

Like so many swamp plants, Rhexia grows in masses,

and, although it rarely adorns the roadway, it gives a rosy bloom to swamp lands that is seen from afar.

The calyx at fruiting time develops into a most exquisite, tiny, urn-shaped form.



Meadow-Beauty. *Rhéxia Virginica*

In the pine-barrens and sandy swamps of New Jersey and Delaware the Awn-Petaled Meadow-Beauty, *Rhéxia aristòsa* is an abundant species. Its leaves are three-nerved instead of five; the rounded petals are obtusely pointed, with a minute awn or bristle at the apex; the anthers are linear and minutely spurred at the back. The general effect of the flowers is the same in both species.

ONAGRÀCEÆ—EVENING-PRIMROSE FAMILY

GREAT WILLOW-HERB. FIREWEED

Epilòbium angustifòlium. Epilòbium hirsùtum

Epilobium, Greek, meaning a Violet upon a pod.

Perennial. Naturalized from Europe. In low grounds, recent clearings, and newly burned-over lands the tall, showy, swaying magenta spikes of the Willow-Herb follow the roadways, linger beside the railroads, and cover woodland tracts in Canada and the Northern States from coast to coast. June–August.

Stem.—Erect, simple or branched, two to eight feet high.

Leaves.—Opposite, sometimes variable; short-petioled, lanceolate, long and narrow, resembling Willow leaves, usually entire, acute at apex. Before blooming the basal leaves form beautiful rosettes.

Flowers.—Magenta-pink, sometimes white, borne in long, terminal spikes which carry at the same time many seed-pods, many flowers in full bloom, and many buds. Each blossom sits upon the summit of a long, slender, purple-stained ovary.

Calyx.—The tube cohering with the ovary.

Corolla.—Petals, four, purple-pink, rounded, spreading on short claws broadest above the middle, sometimes notched, convolute in bud.

Stamens.—Eight, bent downward, inserted on the top of the calyx tube. Anthers purplish; filaments white.

Pistil.—Ovary long, slender, four-sided; style one, long; stigma four-lobed.

Fruit.—Slender capsule, three inches long, opening lengthwise; seeds many, each with a tuft of hairs at the top.

Largely pollinated by bees. Stamens mature before the stigmas. Nectar-bearing.

Great Willow-Herb.
Epilobium angustifolium

"A goodly and stately plant having leaves like the greatest willow osier, garnished with brave flowers of great beauty, consisting of four leaves apiece and of orient purple color," so wrote Gerarde, three hundred years ago. Tall and graceful and willowy, climbing the hillsides, hugging the fence corners, wandering along the roadway and the railroad tracks, taking possession of burnt fields —citizen of the world—this is the Willow-Weed. The Greeks called it Epilobium, sitting on the long pod; the English, Willow-Herb, because of its leaves, and Fireweed, because it loves the ashes of burnt tracts. On the roadsides of Europe it is known as Rose-Bay and French Willow. Entering America by way of the Atlantic coast in colonial days, it crossed the White Horse Pass with the railroad, and has recently been reported from the banks of the Yukon.

The first flowers appear in late June and creep up the stem, leaving behind them a trail of long slender

seed-pods, which fairly bristle all about the stem. The buds are hung upside down, but become erect as the flower opens. When a seed-pod splits asunder it liberates a mass of soft, fluffy down which is attached to the tiny seeds that float upon the moving air. The plant in the mid-period of bloom bears white, silky masses of seeds, long, bristling pods, a few flowers, and many buds, looks dishevelled, and is disappointing in garden or lawn. It is one of the free folk and comports best with the ungardened life of the wild, and, generous of both pollen and nectar, is loved by the bees.

"Floating in nebulous masses about the blackberry thicket, the delicately conspicuous hue of the Fireweed catches the eye. If you study and watch the slender pods it may be that you may surprise one in the act—see one suddenly open and its four walls silently withdraw, while there emerges from the interior a phantom shape, the filmy mass of pappus down with rows of golden seeds attached. This white cloud of silk gradually takes shape, lingers a moment, and then sails away on a passing breeze."

The Small Willow-Herb, *Epilòbium coloràtum* often called the Purple-Leaved Willow-Herb dwells in the ditches by the roadside. It is a small brother of the Great Willow-Herb, and consists of a slender, branching stem, bearing many small pink flowers, each sitting on the end of a slender pod which, when mature, is fully two inches long. The effect of the plant is slenderness and delicacy and its attractiveness is heightened by the purplish tinge which overspreads it; stem and leaves and early pods all have more or less a flush of purple.

EVENING-PRIMROSE

Ónagra biénnis. Œnothèra biénnis

Onagra, the wild ass, said to refer to the similarity of its leaves to the ears of that animal.

Native. Biennial or winter annual. Common everywhere in dry soil, roadsides, unoccupied city lots, waste places.

Stem.—Erect, stout, leafy; more or less hairy; two to five feet high.

Leaves.—Alternate, lanceolate, acute or acuminate, sessile or the lower petioled, undulate; three to five inches long.

Flowers.—Nocturnal, pure yellow, borne in a leafy-bracted, many-flowered terminal spike, with few flowers in bloom at any one time.

Calyx.—Calyx tube slender, much longer than the ovary; border four-lobed.

Stamens.—Four, pollen in cobwebby strings.

Pistil.—Ovary four-celled.

Fruit.—Capsule, four-sided, somewhat narrowed at the end.

Pollinated by night-flying moths. Nectar-bearing. Stamens mature before the stigma.

The Evening-Primrose is our best-known wild flower whose bloom is nocturnal. Common everywhere: roadsides, fence corners, edges of thickets, waste lots in cities; by day dishevelled, unkempt; a stalk bearing coarse leaves and heavy with a trail of ripening seed-pods—at the summit a few wilted flowers—this is the Evening-Primrose by day. The faded blossoms bloomed night before last, the wilting

ones were lovely and fragrant last night, the struggling buds will open as the sun goes down to-day, and the flower call of fragrance will summon to its side the winged rangers of the night.

Evening-Primrose. *Ónagra biénnis*

As summer goes on toward autumn the plant becomes a coarse, unhappy-looking creature, but in early summer, in its youth and beauty, it is attractive, and at any time it is worth while to give a half-hour some evening to see its blossoms burst their bonds. The flower structure is fourfold; four sepals, four petals, eight stamens, and a four-celled ovary. The

bud that is to burst at evening has been restless all day, the petals have been slowly unrolling and steadily pushing against the green walls of their prison-house, and as the sun sinks they are ready to free themselves, only held in leash by the tips of the sepals, which cling together. At length the supreme moment arrives, the tips are forced to give way, and, with a jerk, one sepal after another draws back, folds over, and the corolla, a pure, clear yellow surrounded by an atmosphere of perfume, looks out into the darkening twilight fresh, fragrant, exquisite—to endure for a night. The pollen, in cobwebby masses, was freed from the anthers before the blossom opened and is carried away by the night-flying moths. As the corolla opens the anthers lean away from the style, showing that self-fertilization is no part of nature's plan here.

The name Primrose for the plant is somewhat unfortunate, associated as that name is with the springtime.

Œ. fruticosa, a smaller species

UMBELLÍFERÆ—CARROT FAMILY

COW-PARSNIP

Heràcleum lanàtum

Heracleum, Greek, devoted to Hercules.

Perennial. Native. A conspicuous giant herb, four to eight feet high, bearing a plate-like cluster of small, white flowers and standing in low, moist grounds; is found in full bloom in late June and early July. Labrador and Newfoundland to Alaska, south to North Carolina, Utah, and California.

Root.—Large, fleshy, Parsnip-shaped; juice extremely acrid.

Stem.—Four to eight feet high, one to two inches in diameter; at first wrapped in matted white hair; hollow, grooved, woolly, often purplish.

Leaves.—Large, compounded in threes, two feet or more long, downy beneath; leaflets broadly ovate, sharply toothed and cut-lobed, somewhat thin for size; petioles hollow; basal sheaths clasp the stem.

Flowers.—White, borne in large, flat, compound umbels six to twelve inches across, eight to thirty rays; rays stout, three to six inches long. Involucre deciduous. Involucels of many linear bracts. Calyx teeth obsolete or small. Petals five, wedge-shaped or clawed, those of the outer flowers obcordate or two-lobed. Stamens five; styles two.

Fruit.—Of two dry, seed-like carpels, cohering by their inner face, grayish brown when ripe, nearly half an inch long, flattened, with winged margin and notched apex.

Linnæus dedicated this plant to Hercules, either because of its size or because, according to Pliny,

Cow-Parsnip. *Heràcleum lanàtum*

Hercules used it as medicine. At any rate the name fits admirably an herbaceous plant which rises strong and stately to a height of eight feet and bears at its summit a flat flower cluster ten to fourteen inches across. This creature, appearing with almost tropical luxuriance in colonies by the roadside when the way traverses low, moist ground, is worthy of respectful attention. Its size demands it.

The flower cluster upon examination is seen to be an umbel of umbels, each individual flower five-petaled, the outer blossoms larger than the inner, after the fashion of the *Umbelliferæ*.

The roots are large, their juices acrid, though it is said the Canadian Indians roasted and ate them.

By midsummer the beauty has departed from the plant, for the white flower umbel has been replaced by a brown fruit umbel but its power is not gone nor its strength abated. With the great umbel now carrying from twenty to thirty small umbels and each of these carrying from twenty-five to thirty double seeds, the seed production of a single plant runs into thousands. The seeds are plump for their type and evidently have food value for the flocks of the wild.

WILD PARSNIP

Pastinàca sativa

Pastinaca, from Latin *pastus*, food.

Biennial, rarely annual. Naturalized from Europe. A familiar weed on roadsides and borders of fields, reaching the height of two to five feet and bearing many flat umbels of greenish yellow flowers. Throughout the United States and Canada. June–August.

Roots.—Thick, tap, white, poisonous.

Stems.—Tough, smooth, grooved, hollow, often stained with brown.

Leaves.—Basal leaves pinnately compound, often eighteen inches long, with long grooved petioles. Leaflets coarsely and sharply toothed, often cut-lobed, irregularly serrate-dentate.

Flowers.—Greenish yellow, borne in flat-topped compound umbels three to four inches across, eight to fifteen-rayed. Petals small, golden-yellow, tips incurved.

The Wild Parsnip is a tall, widely branching, thick-rooted biennial herb, standing along the roadway and blooming in July. The little yellow flowers are all of the same size, and each tiny petal tip is incurved. This plant is either the Garden Parsnip gone wrong, or else the primitive from which the Garden Parsnip was developed. In either case it is no longer a food but a poison, even after it has been cooked. Moreover, it is reported as the host to a fungus which infects and destroys Celery plants.

HEMLOCK WATER-PARSNIP

Sium cicutæfŏlium

A native perennial marsh plant; bearing umbels of white flowers. Nova Scotia to British Columbia and southward. July–October.

Root.—A cluster of tubers.

Stems.—Erect, stout, angled, smooth.

Leaves.—Lower and basal leaves alternate, long-petioled, pinnately compound; the upper leaves nearly sessile. Segments long, narrow, distant, serrate, variable.

Flowers.—Large compound umbels of small white flowers of the *Umbelliferæ* type. Involucre and involucels

Wild Parsnip. *Pastinàca sativa*

of many narrow bracts. Calyx tube grown fast to the ovary; corolla of five petals; stamens five; styles two. *Fruit.*—Of two compressed carpels with prominent ribs.

Hemlock Water-Parsnip. *Sium cicutæfolium*

The Hemlock Water-Parsnip is a water-loving plant found in marshes making tangles in the soft mud with Pickerel-weed, Joe-Pye Weed, and Sweet-Flag, and sometimes planting itself just out and sometimes just in the flowing current of a clear mountain stream. Its compound umbels are many-rayed, three inches across, the umbellets hemispherical, and the plant interesting because of its companions and

its watery habitat. The leaves are simply pinnate, the segments long, narrow, and distant, but become more or less variable as conditions change; the basal leaves often bipinnate in their lower segments. The plant belongs to the poison group of Water-Hemlock and Poison-Hemlock, but it is not so tall as either; its leaves are quite different but the books report it as poisonous. Its umbels of white flowers are typical of the entire poisonous group.

POISON-HEMLOCK. SPOTTED COWBANE

Conium maculatum

Conium, Greek, Hemlock.

Biennial. Naturalized from Europe. An umbelliferous herb two to five feet high, bearing many umbels of small, white flowers. Moist soil, waste places. New England west to Michigan, south to Virginia. June–July.

Stem.—Smooth, erect, much branched, hollow, often purple-spotted.

Leaves.—Lower and basal leaves petioled; the upper nearly sessile. Pinnate and thrice-divided; leaflets finely cut and toothed.

Flowers.—White, borne in terminal compound umbels, each with ten to fifteen rays, and each ray bearing a small umbel of tiny, white, five-petaled flowers. Involucre and involucels of small narrow bracts.

Fruit.—Of two dry seed-like carpels, cohering by their inner face, grayish-brown when ripe, about one-eighth of an inch long, ovoid, flattened at the side, prominently ribbed and having on the flattened surface a deep narrow groove.

This is one of the most dangerous, because it is one of the most poisonous plants of our flora. It is

said to be the herb which supplied the cup of poison to Socrates, and thirty thousand pounds of seeds and twenty thousand pounds of leaves are necessary to supply the drug market and are used for nervous diseases. The poisonous principle is a very powerful narcotic poison. The plant is tall, clean cut, much branched with leaves that somewhat resemble a spreading Parsley. Its white compound umbels are attractive and there is nothing external which would at first mark it save its often spotted stem. The whole plant has a very disagreeable "mousey" odor when bruised.

Leaf of Water-Hemlock. *Cicùta maculàta*

The Water-Hemlock, *Cicùta maculàta*, native, a dweller by ditches and ponds, marshy places, and low grounds, is quite as poisonous as the Poison-Hemlock. The roots are two to four inches long, fleshy, tuberous, bunched in a cluster at the swollen base of the stem. These are especially dangerous, for their taste is pleasantly aromatic, somewhat like that of Sweet Cicely, for which they are sometimes mistaken, generally with fatal results.

Stems are stout, smooth, hollow; two to six feet high, streaked with brown and purple; the color more pronounced at the junction of stem and branches. Leaves

are pinnately twice or thrice-divided; the leaflets lance-shaped, thin, sharply and rather coarsely toothed; the veins terminating in the notches instead of at the points. Umbels are white, compound, and the rays uneven in length.

These two plants are a menace to children and domestic animals, and when located should be destroyed. This is everybody's business.

WILD CARROT. QUEEN ANNE'S LACE. BIRDS' NESTS

Daùcus caròta

Daucus, the ancient Greek name of the Carrot.

A biennial plant about two feet high with hairy stems and fringy leaves, bearing a symmetrical flat-topped umbel of small white flowers. Roadsides and fields. Naturalized from Europe. Common from Atlantic coast to the Mississippi. July–September.

Root.—Tap, yellowish white, woody, acrid, yet having the typical Carrot flavor.

Stems.—Round, slender, hairy, finely ribbed.

Leaves.—Alternate, petioled, tri-pinnate, yellowish green; segments dentate, lobed or pinnatifid; upper leaves less divided.

Flowers.—Small, white, borne in double compound umbels; outer florets the largest; in the centre of the umbel one dark maroon floret. Involucre of several linear bracts.

Calyx.—Adherent to the ovary.

Corolla.—Petals five, small, white.

Stamens.—Five, inserted on the disk; filaments, white; anthers, pale yellow.

Wild Carrot in Possession of a Field. *Daùcus caròta*

Pistil.—Ovary two-celled; styles two.

Fruit.—Dry, short, two carpels which cohere, but split apart when ripe; prickles in rows on the ribs.

Two herbs, weeds by every count, without one redeeming trait from the farmer's standpoint, with not one justification when brought into court, drift, a midsummer dream of white beauty, over fields and meadows. The Ox-eye Daisy is the earlier of the two; it comes with the Clovers and the Buttercups. The bloom of the Wild Carrot sweeps over the fields in early August.

The many tiny florets of the Carrot umbel are disposed in a radiating pattern as fine as lace; in the centre of the cluster is one deep maroon floret, a single point of color surrounded by whiteness. The umbel from its first showing of white is a full week coming to maturity; as the florets open it is concave, in its prime more or less convex; fading, it becomes concave again, and finally the ripening seeds are protected by unfolding arms that make indeed a Bird's-Nest, which is one of the country names for the plant.

The slender, hairy, biennial stalk grows erect one to three feet from a deep-rooted, conical tap-root. Because of this root and its unmistakable Carrot flavor the plant is very generally believed to be the primitive of our Garden Carrot. Whatever it may have been or may be capable of being, at the present time it is a pestiferous weed and will take defiant possession of great tracts, but as it is a biennial it can easily be extirpated. Not to do this is a reflection upon the farmer.

ERICÀCEÆ—HEATH FAMILY

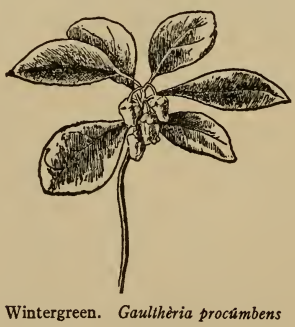
WINTERGREEN CHECKERBERRY

Gaulthèria procúmbens

A woody aromatic plant, with evergreen leaves.

Stem.—Woody, slender, creeping or subterranean; branches erect, two to six inches high.

Leaves.—Mostly clustered at the ends of the branches; oval, oblong or obovate, narrowed at base, short-petioled;



Wintergreen. *Gaulthèria procúmbens*

margin serrate with low bristle-tipped teeth, dark green and shining above, pale beneath.

Flowers.—White, solitary in the axils of the leaves, drooping on recurved peduncles.

Calyx.—Five-cleft, two-bracted, persistent.

Corolla.—Ovoid urn-shaped, white, five-toothed.

Stamens.—Ten, included, inserted at the base of the corolla; filaments dilated above the base; anther-sacs opening by a terminal pore.

Pistil.—Ovary five-celled, five-lobed; stigma obtuse.

Fruit.—Fleshy ovary surrounding the capsule and forming a berry-like fruit. Depressed globose, slightly five-lobed, bright red, mealy, spicy.

In the high uplands, as the road climbs the mountain, often beds of Wintergreen come down the hillside to the roadway in shining hosts. All the clustered young leaves are yellowish green, slightly darkened; all are delightfully aromatic. A little group of white, waxen flowers, nodding vases, adorns each sturdy stem in the flowering season. Often with it, but not so abundant, are the Pyrolas, and weaving in and out may be the Running-Pine and often the Partridge Berry.

PRIMULÀCEÆ—PRIMROSE FAMILY

BULB-BEARING LOOSESTRIFE

Lysimàchia terréstris

Lysimachia, Greek, Loosestrife.

A native perennial herb, dwelling in swampy land and wet ditches, bearing wands of yellow flowers. Newfoundland, New England, and southward. July–September.

Stems.—Smooth, hollow, leafy, less than two feet high.

Leaves.—Opposite, narrow, lanceolate or oblong-lanceolate; entire, acute at both ends, short-petioled or sessile, sometimes covered with black dots.

Flowers.—Star-like, yellow, in terminal racemes; pedicel half to three-fourths of an inch long.

Calyx.—Five, minute sepals, ovate, acute.

Corolla.—Yellow, rotate, with very short tube and border cut into five, ovate, acute segments; each segment slightly curling at the tip and marked with dark streaks and two reddish dots at the base.

Stamens.—Five, inserted on the corolla, erect, monadelphous below; filaments glandular; anthers clustered, reddish.

Pistil.—Ovary once-celled; style one; stigma obtuse.

Fruit.—Capsule, one-celled.

Pollinated by flies. Nectar-bearing. Anthers mature before stigma.

The slender, yellow wands of this Loosestrife stand in the wet ditches by the wayside, and a stem in bloom

looks like a hollow cylinder of flowers. Each flower is a yellow star, five-pointed, with a curious, little, flaunting curve to the petals, which are slightly marked with lines but conspicuously marked with dots that locate the nectar. The filaments of the anthers are grown together for half their length and densely glandular, which makes them sticky. Small ants are warned away. The anthers surround the stigma and mature before it becomes receptive. The flowers are arranged on short, slender pedicels, in a long terminal spike, and open gradually as they ascend the stalk; the flowering impulse begins from below. The flowers arrange themselves so that one does not shade the other, and each receives its share of sunlight. After flowering, the plant often bears small bulbs in the axils of its leaves, which give its specific name.

Bulb-Bearing Loosestrife.
Lysimàchia terréstris

The name Loosestrife harks back to a curious belief that its presence quieted strife and quarrelling, why, one can scarcely tell.

The Whorled Loosestrife, *Lysimàchia quadrifòlia*, often stands in the tangle not far from the home of *Lysimachia terrestris*. It may be recognized by its leaves, usually in a whorl of four; and in the axils of all the upper whorls, on long slender peduncles, is a

Money. *Lysimàchia nummulària*

solitary yellow blossom greatly resembling that of its neighbor.

Money, Creeping Charley, *Lysimàchia nummulària*, the well-known trailing plant, has now run wild, and great banks of roadsides may be found yellow with it in midsummer. The stem creeps; the small, round leaves are opposite; and the pretty, yellow flowers are solitary on short peduncles from the axils of the leaves. It is a vigorous plant, long ago it forsook the garden enclosure and now romps at will on highway and by-way. It is, of course, an emigrant from Europe.

PLUMBAGINÀCEÆ—PLUMBAGO FAMILY

SEA-LAVENDER. MARSH-ROSEMARY

Státice limònium. Limònium Caroliniànum

Statice, Greek, meaning stop; referring to the astringent juice of many species.

A native, perennial plant of the salt marshes, following the coast from Labrador to Florida and Texas.

Rootstock.—Thick and fleshy, which furnishes a powerful astringent.

Stem.—Slender, grooved, leafless, branched at the top.

Leaves.—Basal, flat, narrowed into margined petioles, entire or slightly undulate; midvein prominent.

Flowers.—Tiny, pale lavender, sitting erect and loosely along the upper side of the flowering branchlets. Fragrant.

Calyx.—Tubular, five-toothed, ribbed.

Corolla.—Petals five, spatulate, clawed.

Stamens.—Five, growing to the bases of the petals; filaments threadlike.

Pistil.—Ovary one-celled; styles five.

Fruit.—Utricle, one-seeded.

The Sea-Lavender stands at the shore where land and water meet, and the spray-like bloom seen at a little distance in masses looks like a blue-gray mist blown in from the sea. The flowering stem is smooth, ridged, and leafless; at the top it divides and sub-

divides, curving outward, and upon the upper side sits a loose row of pale purple florets, inconspicuous singly but together making an exquisite glow of color.

Marsh-Rosemary. *Státice limónium*

The blossoming spray does not lose its color when dried, and for this reason it is sought for winter bouquets. Florists use a dried garden form of *Státice* in floral combinations, as this characteristic of retaining the color adheres to the entire genus.

GENTIANÀCEÆ—GENTIAN FAMILY

ROSE OF PLYMOUTH. MARSH-PINK. SABBATIA

Sabbàtia stellàris

Sabbatia, in honor of Sabbati, an Italian botanist.

A native, annual or biennial plant, growing in the salt meadows along the coast from Maine to Florida.

Stem.—One to two feet high, erect, smooth.

Leaves.—Alternate, lanceolate-oblong to linear, sessile; the uppermost narrowly linear and bract-like, the lower ones are broader.

Flowers.—Rose-pink to white, solitary, about an inch across.

Calyx.—Campanulate, five-lobed; lobes linear, shorter or nearly equal to the corolla segments.

Corolla.—Wheel-shaped, five-lobed, rose-pink to white, with a yellowish, starry eye bordered with red; lobes, oblong or obovate.

Stamens.—Five, inserted on the tube of the corolla; filaments threadlike, short; anthers curved.

Pistil.—Ovary one-celled; style two-cleft.

Fruit.—Capsule, many-seeded.

Pollinated by flies and bees. Nectar-bearing. Stamens mature before the stigmas.

Three Sabbatias dwell in contentment along the Atlantic coast, very similar in character and appearance. All bear five-pointed, starry flowers of a pink that is born of the moisture-ladened air of the sea,

and in midsummer salt marshes and meadows are radiant with their beauty. The Rose of Plymouth is rarely more than two feet high, its rose-pink flowers often fade to white, and its yellow eye is bordered with carmine.

Sabbatia.
Sabbàtia stellàris

"No more beautiful flower grows in New England than the Sabbatia, and at Plymouth, where it is especially profuse and luxuriant on the borders of the ponds so characteristic of that part of eastern Massachusetts, it is held in peculiar affection and, one may almost say, reverence. It is locally called the Rose of Plymouth and during its brief season of bloom is sold in quantities in the streets of the town and used in the adornment of houses and churches. Its name comes from that of an early botanist, Liberatus Sabbati; but this well established truth is totally disregarded by local tradition. Almost every one in Plymouth firmly believes that the title is due to the fact that the Pilgrims of 1620 first saw the flower on a Sabbath day and, entranced by its masses of pinkish lilac color, named it for the holy day. Indeed, the belief is so deeply ingrained in the Plymouth mind, that, we are told, strong objections are made if any other flowers are irreverently mingled with it in church decoration. Yet the legend was invented not more than twenty-five years ago by a man whose identity is still well remembered, and thus it is of even more recent origin than the one still more universally credited, which says that the Pilgrim Fathers landed upon Plymouth Rock."

—*Garden and Forest.*

Similar to the Rose of Plymouth and even more graceful and attractive is *Sabbàtia grâcilis*, whose upper leaves are very narrow, and calyx lobes exceed-

ingly slender, almost threadlike. It also appears as *Sabbàtia campanulàta.*

The third of the trio is the Large Marsh-Pink, *Sabbàtia choloroìdes* or *Sabbàtia dodecándra.* It has not as many flowers as the others, but they are larger, sometimes two and a half inches across, often with nine to twelve pink petals. Although its preferred home is the salt marshes, it sometimes frequents the sandy borders of ponds not far inland.

Sabbàtia angularis, Square-stemmed Sabbatia, is an inland plant, but it possesses the same attractive grace as the others. Like the others, its flowers are bright, fragrant, rose-pink, and in their chosen home bloom abundantly through July and August. The stem branches considerably, is four-sided, and grows two or three feet high. The branches which bear a single flower are usually arranged in opposite pairs. The five-ribbed, pointed, oval leaves are somewhat heart-shaped and clasp the stem in pairs. The large, slender-stemmed flowers are rose-pink, with a central green star. It prefers rich soil and ranges from New York to Florida, and west to Ontario, Michigan, and Louisiana.

APOCYNÀCEÆ—DOGBANE FAMILY

SPREADING DOGBANE. HONEY-BLOOM. BITTERROOT

Apócynum androsæmifòlium

From Greek *apo*, from, and *kuns*, dog—the ancient name.

Perennial. Native. Leafy and branching plant, extremely graceful and attractive, one to four feet high, bearing small, white and pink, bell-shaped flowers; found along roadsides, in fields, and the borders of thickets. Nova Scotia to the Northwest Territory, and south to Georgia. July–August. State flower of Montana. Juices milky and acrid.

Rootstock.—Horizontal, creeping.

Stem.—One to four feet high, smooth, often stained on one side with red, divergently branching.

Leaves.—Opposite, petioled, ovate, entire, acute at apex.

Flowers.—Bell-shaped, size of bells of Lily-of-the-Valley. White with pink stripes, five-lobed, lobes recurving; borne in loose, spreading, terminal or axillary clusters.

Calyx.—Five-parted, lobes acute.

Corolla.—Bell-shaped, five-lobed, bearing five triangular appendages below the throat opposite the lobes, white, striped with pink.

Stamens.—Five, inserted at the base of the corolla; filaments flat, shorter than the arrow-shaped anthers which converge around the stigma and are slightly adherent to it.

Pistil.—Ovaries two; style none; stigma large, slightly two-lobed.

Fruit.—Two slender follicles, five to six inches long; crowded with seeds, each having a tuft of long, silky down at the apex, by means of which the wind carries them away.

Pollinated by butterflies, beetles, bees, and flies. Nectar-bearing.

"They lay wait as he that setteth snares."—Jeremiah v : 26.

The story of plants that set their traps for insects and lure them to their death is more than a twice-told

Spreading Dogbane. *Apócynum androsæmifòlium*

tale. We all know the habits of the Pitcher-Plant, the Venus's Fly-Trap, and the Sundews. Each of these in one way or another seizes the body of an insect and assimilates its juices. Darwin points out that this is probably a device to supply the plant with nitrogen where the roots prove inefficient for the purpose. The plant is supposed to kill for food, and this we must in our own defense hold legitimate, but it seems that there are some flowers which kill with no return to themselves and the question arises, Why? One of these is the

Dogbane, a plant common enough all summer, along shady roadsides and around the borders of thickets. It grows about three feet high, erect, and branching. The blossoms are nearly the size and much the shape of a single flower of Lily-of-the-Valley. The bell-shaped corolla has five lobes that spread and curve outward. The color is white, but five pink lines run down from the edge of the bell to the centre. These say to the visiting insect as clearly as flowers can talk: "At the bottom of the cup is nectar."

At the bottom of the cup is not only nectar but a trap as well—in fact, five traps, as Müller, who has carefully studied the plant, clearly shows. His account is virtually as follows: At the base of the cup are five nectar-bearing glands. These stand in a ring around the pistil. Outside them is the ring of stamens, five in number; in shape the anthers are like arrow-heads. At the two points at the base of the arrow-head are two hard little horns, and the anthers stand so close together that the horn of one anther stands close to the horn of another. Now, curiously enough, inside the corolla, near its base, are five triangular bodies with their points up and placed so that they alternate with the stamens and a little below them, so that each triangular body on the corolla covers two little horns of the stamens by a sort of interlocking. The result is that a weak insect coming for nectar, and putting its proboscis in between the anthers as it must to get the nectar, finds itself caught by the three interlocking points as in a trap. If strong, it pulls itself free; if weak, it is held and dies of starvation. The puzzle is: In what way is the plant benefited, and if not benefited why does it do it?

Any one picking a flowering branch and investigating will be very likely to find an insect caught, sometimes by a single leg, sometimes by proboscis, but in every case doomed to die.

INDIAN HEMP

Apócynum cannàbrium

Perennial. Native. Roadsides, fence corners, and thickets, in sandy or gravelly soils; chiefly near streams, exceedingly variable. Across the continent from Anticosti to British Columbia, southward to Florida and Texas. August–October.

Root.—Deep, vertical, branching.

Stem.—Three to six feet high, branching and leafy, branches ascending; juice milky and sticky.

Leaves.—Opposite, oblong, lanceolate-oblong, or ovate-oblong, two and a half to three inches long, smooth above, roughish beneath; midvein and veinlets whitish, sessile, or short-petioled. Margin entire, apex with a little sharp point.

Flowers.—Small, greenish white, erect in terminal and axillary clusters.

Calyx.—Five-parted; segments acute.

Corolla.—Tubular, five-pointed, greenish white, an eighth of an inch or more across; minute triangular appendages at the base alternate with the stamens.

Stamens.—Five, inserted on the base of the corolla; anthers sagittate, grown together around the stigma and slightly adherent to it.

Pistil.—Ovary of two carpels; stigma obtuse, obscurely two-lobed.

Fruit.—Follicles five to six inches long, slender, terete, opening on one side only, in pairs. Seeds many, small, the apex tipped with a long coma.

Nearly related to the Spreading Dogbane, not so beautiful, but quite as obnoxious a weed. The dried roots, however, are rated in the drug market at eight to ten cents a pound; the inner bark yields a fine and very strong fibre which tradition says the Indians used for strings. The plant is a pest wherever it appears.

ASCLEPIADÀCEÆ—MILKWEED FAMILY

COMMON MILKWEED. SILKWEED

Asclépias Syrìaca

A Latinized corruption of Æsculapius, to whom the plant was dedicated.

A native, perennial plant; the most familiar of the Milkweeds, growing by roadsides, in waste places, along fences. Flower clusters vary from green to dull, pale, pinkish purple. From New Brunswick to Saskatchewan, south to North Carolina and Kansas. July–August.

Stem.—Stout, simple, three to five feet high, pubescent; juice milky.

Leaves.—Opposite, thick, oblong, entire at margin, obtuse at apex, grayish green, densely downy below, smooth above; veins noticeable, especially the midvein; four to nine inches long. Petioles stout.

Flowers.—Dull, pale, purplish pink borne in several axillary umbels, thirty to sixty flowers in a cluster, forming large, handsome, rounded heads; fragrant; flower-stems drooping. Clusters at first green, then whitish, then dull pink. Pedicels pubescent.

Calyx.—Five-parted; segments reflexed, hairy.

Corolla.—Dull greenish pink, deeply five-parted; segments reflexed. Corona of five concave hoods, each having within a small incurved horn. These hoods rise between the reflexed corolla and the united filaments of the stamens.

Stamens.—Five, inserted on the corolla, the filaments united in a tube around the pistil. The anther-sacs

are dark, tipped with a winged membrane with waxy, pear-shaped pollen masses in each sac.

Pistil.—Ovary of two carpels, with two short styles, united at their summits by a five-lobed stigmatic disk.

Fruit.—Follicle, two and a half to four inches long, containing many plumy seeds.

Pollinated by bees and bee-like flies. Nectar-bearing.

The Milkweed stands by the roadside, sometimes a solitary stem, but oftener two to five sustain and support one another. It is a plant of dignity rather than beauty. Each flowering stem bears many large, broadly oblong leaves that are of a grayish green, soft to the touch above and velvety beneath, and near the summit are two to five limp clusters of drooping flowers, each cluster borne in the axil of a leaf. The color of the clusters varies from youth to age, but this is never quite pure, always more or less muddied.

One does not pick the Milkweed for a most excellent reason. A striking peculiarity of the plant is the abundance of milk-white, sticky juice that pervades it and which pours out of the slightest wound whether this be upon stem, flower, pedicel, or leaf vein. The authorities say that this is a kind of crude rubber. If the stem is carefully cut and the end dried with a blotter, the centre is seen to have around it a dark green ring, and outside of this another pale green ring. The milk exudes from the dark green ring. This milk is not the sap of the plant; it is a special secretion and very acrid to the taste, which is a sufficient explanation why the Milkweed is immune to attacks of grazing animals.

The Milkweed blossom is of peculiar construction and almost as highly organized as an Orchid. The sepals and petals, each five in number, fold back as

Common Milkweed. *Asclépias Syrìaca*

soon as the flower opens, and press closely against the flower-stalk. Indeed, they take themselves out of the way so thoroughly that one almost forgets they are there, at any rate it is the hoods and horns of the corona that attract attention. This corona consists of five hooded cups, nectaries, with an incurved horn in each. Within this circle of honey-jars are the five stamens, difficult to separate because of their peculiar growth and arrangement. They grow from the base of the corolla, and the filaments connect with each other and surround the pistil which consists of two carpels. Not only do they surround the pistil, the anther-sacs have inlooking scarious tips which unite and form a five-sided disk. The whole stamen system has been compared to a cup, upside down, standing in the midst of the flower; the sides being the filaments of the stamens, and the top the united tips of the anthers. The pollen of each anther is collected into a club-shaped mass which is joined to a similar mass formed by the pollen of the next anther. Thus the connected pollen mass that looks like two clubs joined, belongs to two separate stamens, which stand side by side. This entire arrangement shows very clearly and can be most easily studied in a fading flower.

Milkweed Flower

The pistil has an ovary of two carpels with two short styles united at their summits by a five-lobed stigmatic disk. In order to get a complete comprehension of the flower it is well to study it in bud, in full flower, and when about to fall.

The pollination of the flower has been clearly pointed out by Müller, as follows:

"Between the hoods, at the point where the edges of the stamen disk lie together is a narrow notch. There are five of these in each blossom. The bee, of course, seeks the nectar at the centre of the flower, but this droops on a yielding pedicel so that she must continually struggle to keep her place, with the result that she slips and slides, and finally, perhaps, a foot slips into one of these notches. The bee draws up her leg in the effort to escape and her foot catches here. If she is strong enough she pulls it out and pulls with it two tiny club-shaped masses which cling to her leg. After the fashion of bees, she goes to another Milkweed blossom and deposits the pollen mass there. The entire arrangement is extremely intricate, and not extremely successful, for many flowers fail of fertilization. Many insects, flies, bees, wasps, and butterflies come to the Milkweed feast, but only bees seem able to pollinate the flower. If one compares the number of blossoms of a Milkweed stem with the number of pods it bears, it becomes apparent that but very few indeed of the blossoms achieve fertilization."

Anna B. Comstock, writing of Milkweeds, says: "To open a Milkweed pod is a joy and a delight. Take a pod still green, though full grown, open by pulling apart along the seam, this is not a seam with a raw edge, but is furnished with a perfect selvage. Below the opening is a line of white velvet, at one end, and with their heads all in one direction, are the beautiful pale-rimmed, brown, overlapping seeds, and at the other end we see the exquisite Milkweed silk with the skein so polished that no reel could give us a thread of such lustre. If we remove the contents of the pod as a whole we see that the velvety portion is

really a seed support and that it joins the pod at either end. Pull off a seed and with it comes its own skein of floss, shining like a pearl; if we hold the seed in the hand a moment the skein unwinds itself into a fluff of shining threads, each thread thrusts itself out, and rests upon air—and here is a balloon."

Of the entire Milkweed group, the Butterfly-Weed, *Asclêpias tuberòsa*, a brilliant yellow, is the most ornamental and has been very generally transferred to the garden. It abounds in pastures and on road-sides, where it catches the sunshine and glows amid the surrounding green as a living flame. Above it the butterflies come and go, surpassed in winged brilliancy by the flowers themselves.

This plant has no milky juice, ripens in pairs the long slender pods of the family type, and when transplanted gives to the garden walk a real splendor.

The Swamp Milkweed, *Asclêpias incarnàta* grows in masses in wet and swampy places. It appears so abundantly as often to give a glow of pink over considerable areas. The color is really a purple-pink of varying intensity. This is a smooth plant, there is another very like it which is hairy.

Once in a while one finds the low-growing Four-Leaved Milkweed, *Asclêpias quadrifòlia*, so named because of the whorls of four tapering leaves that appear about the middle of the stalk. Usually there are no leaves on the lower part. The hooded blossoms are of delicate pink and white; the aspect of the entire plant is delicacy and it is found in woods and thickets chiefly.

Again one finds another Milkweed very similar to *Asclêpias Syrìaca* but bearing much more brilliant

flowers, in color a deep magenta. This is *Asclépias purpurêscens*.

The books report eighteen distinct Milkweeds in our range, but probably these five are all that the roadside would contribute to our summer gathering. All are easy of recognition because the Milkweed blossom is *sui generis*, it does not change its family form. The entire group stand luxuriant in their ample growth, their abounding health and vitality.

CONVOLVULÀCEÆ—MORNING-GLORY FAMILY

HEDGE BINDWEED. WILD MORNING-GLORY

Convólvulus sèpium

Name from *convolvo*, to entwine.

Perennial. A vigorous twining and trailing vine, bearing white or pinkish Morning-Glory blossoms. Wayside hedges, thickets, open fields, walls, wire fences; everywhere. Naturalized from Europe. Nova Scotia to North Carolina, westward to Nebraska.

Stem.—Twining or trailing, smooth or hairy, three to ten feet long.

Leaves.—Triangular, halberd-shaped or arrow-shaped, acute or pointed; two to five inches long, on slender petioles.

Flowers.—Morning-Glory type, pale pink with white stripes or all white, or white with pink stripes; about two inches long. Solitary, on long peduncles from leaf axils.

Calyx.—Of five, pale green sepals of unequal size; concealed by two large bracts at base.

Corolla.—A five-lobed bell; twisted in the bud.

Stamens.—Five, inserted on the corolla tube.

Pistil.—Ovary two-celled; style two-cleft at apex.

Fruit.—Globose capsule, two cells and two seeds in a cell.

Pollinated chiefly by bees. Nectar-bearing. Anthers mature before the stigmas.

If the Hedge Bindweed could think it would certainly conclude that wire fences were made for its especial delectation; at any rate it uses them, and one finds long stretches of fence transformed into a leafy wall by this delicate vine which holds out its pink and white bells into the sunshine with grace and charm.

Wild Morning-Glory.
Convólvulus sèpium

The vine has an efficient way of finding a support, after the method of all vines. It lifts its growing tip into the air so that it may swing in a circle, and as soon as this tip catches a support it makes fast; soon one of the arrow-shaped leaves manages to get an ear over, and in a short time the vine has a hold. The stem twines and winds in the direction of the hands of the clock, right under, left over.

Enveloping the base of the flower-bell are two large bracts, each keeled down the centre, and these conceal and protect the five, pale green sepals. The corolla is an open bell with five lobes and down from each lobe runs a stripe which guides visiting insects to a tiny nectar-well. The color varies from pink with white stripes to white with pink stripes. When the flower first opens it shows the spoon-shaped stigmas close together pushing up through the anther cluster; later, the style lengthens, bringing the stigmas far beyond the anthers; the pollen is white. On cloudy mornings the bells are slow to open, but on moonlight nights they are all wide-awake and

watching for their best friend the moth, *Sphinx convólvuli.* In the sunshine they welcome the bees and the butterflies.

After the corolla falls the lobes of the calyx close up about the pistil and outside of these the two great, leafy bracts enfold them all. Later, if all goes well, there will be a little round pod of two cells and two seeds in a cell.

When no support appears the Hedge Bindweed cheerfully trails itself over the grass and weeds, its arrow leaves making a tapestry of exquisite pattern and texture. At first the leaves are very beautiful, but evidently they are toothsome to insects and become badly eaten by September.

Several species of Bindweed frequent the roadside ways, but all agree in general habit and floral structure. The Small Field Bindweed, *Convólvulus arvénsis*, another European form, has wandered from the seaboard as far as Kansas. The blossom is smaller than that of the Hedge Bindweed and lacks the leaf-like bracts at its base.

CUSCUTÀCEÆ—DODDER FAMILY

COMMON DODDER

Cúscuta gronòvii

Name supposed to be of Arabic derivation.

Annual. Native. A parasite, appearing as a mass of bright yellow stems, twining about herbs and shrubs, to which they adhere by means of suckers. Nova Scotia to Manitoba, and south to the Gulf States. July–September.

Stems.—Slender, leafless, often climbing high, varying in color from yellow to orange.

Leaves.—Represented by a few minute, yellow scales, fringed.

Flowers.—Small, clustered, cream-white, usually produced in late summer and in autumn. Variable in size and compactness of clusters.

Calyx.—Minute, five-cleft, greenish white.

Corolla.—Small, white, bell-shaped, five-lobed.

Stamens.—Five, inserted on corolla-throat above a scale.

Pistil.—Ovary one; styles two.

Fruit.—Globular capsule.

One often sees in midsummer by the roadside or in low, moist lands where there is a thicket of herbs and bushes, and sometimes in the open, a tangle of leafless, threadlike stems which look astonishingly like a coil of copper wire, sometimes in mass and sometimes coiled and twisted about the stems and leaves

of other plants. In bright sunshine the color has really a metallic glint. This is the Dodder, a degenerate, a thief, and a parasite. Long ago the Dodder forsook the paths of industry and rectitude, and began to reap where it had not sown and enjoy what it had not earned. Somehow it found out that it was possible to send out little suckers to penetrate the bark of other plants, to reach down to their sap-channels, and so to live upon their juices.

Common Dodder in fruit. *Cûscuta gronòvii*

The plant is virtually leafless, a few minute scales do duty for leaves, and although its seeds germinate in the ground, as soon as the young twining stem gets a strangle-hold upon another plant, it ceases to work for itself, its root and lower part of stem wither away, leaving the Dodder in midair, as it were, but abundantly nourished by the juices it finds in other plants. Having no need of these organs, it loses them and becomes a plant without a root, without a leaf, with a stem incapable of bearing its own weight—a parasite and a vampire. But it grows and waxes strong and powerful, blooms abundantly, ripens many seeds, which in the moist soil develop quickly, and so the plant appears in great masses and patches, a tangle of golden threads bearing many groups of minute, bunched, white flowers.

Celia Thaxter, in "An Island Garden," gives her experience with Dodder. "They emerge from the ground, each like a fine yellow hair, till they are an

inch and a half or two inches long; they reach with might and main toward the nearest legitimate growing plant, and when they touch it cling to it like a limpet; then they draw their other end up out of the ground and set up housekeeping for the rest of their lives. They adhere to the unhappy individual upon which they have fixed themselves with a grip that grows more and more horrible; they suck all its juices, drink all its health and strength and beauty, and fling out trailers to the next, and the next, and the next, till the whole garden is a mass of ruin and despair."

The books give a hundred species of Dodder, all told, of which twelve flourish here at the north, fifteen others are recorded in the southern and western parts of North America.

BORAGINÀCEÆ—BORAGE FAMILY

HOUND'S-TONGUE. GIPSY-FLOWER

Cynoglossum officinàle

Cynoglóssum, Greek, hound's tongue.

Biennial. A stout, leafy, branching plant dwelling by the roadside and bearing clusters of dull, purplish red flowers. Naturalized from Europe. Dry fields and waste places, from New Brunswick to Minnesota, south to the Carolinas and Kansas. May–September.

Root.—Thick, deep-boring, black.

Stem.—Two to three feet high, erect, stout, hairy, leafy and usually branched.

Leaves.—Basal and lower leaves entire, large, oblong or oblong-lanceolate, sometimes obtuse, six to twelve inches long. Upper leaves lanceolate, acute or acuminate, sessile sometimes clasping; downy-hairy.

Flowers.—Dull, reddish purple, in panicled, more or less scorpoid racemes.

Calyx.—Five-cleft, enlarged in points.

Corolla.—Funnel form, the tube short, the throat closed by five scales, opposite the rounded lobes.

Stamens.—Five, included; filaments short.

Pistil.—Ovary deeply four-lobed; style one.

Fruit.—Four nutlets, forming a tiny pyramid—splitting away at maturity, but hanging attached to portions of the style. Short barbed prickles.

The common name Hound's-Tongue has very little warrant from the shape of the leaves which is said to

suggest it. The plant is a pest of pastures, having a disagreeable odor and a nauseous taste, the burrs, moreover, being among the worst that beset the fleeces of sheep. Being a biennial and first appearing as a conspicuous tuft of leaves it can easily be cut down by spade or hoe. Fruiting stalks should not be allowed to mature.

VIPER'S-BUGLOSS. BLUEWEED

Échium vulgâre

Echium, Greek, meaning viper.

A troublesome, biennial weed, bearing many brilliant blue flowers. Naturalized from Europe. Dry fields, waste places, roadsides. New Brunswick to Virginia and westward. July–August.

Stem.—Stout, bristly haired, much branched, stained with red and purple.

Leaves.—Alternate, rough and hairy, oblong or lanceolate, entire and clasping; the lower narrowed into short petioles.

Flowers.—Deep violet-blue, varying to reddish purple, in leafy-bracted, sco·poid racemes at the ends of the branches.

Calyx.—Five-parted, segments, narrow.

Corolla.—Funnel-form, unequally five-lobed; lobes rounded and spreading.

Stamens.—Five, slender, inserted on the corolla tube, unequal, exserted; filaments dilated at the base; anthers showy red.

Pistil.—Ovary four-lobed; style threadlike; stigma two-cleft.

Fruit.—Four nutlets, erect, ovoid, rough, attached by their bases to the flat receptacle.

Viper's-Bugloss. *Échium vulgàre*

Pollinated by many insects. Nectar-bearing. Stamens mature before the stigmas.

"The Bugloss paints the sterile fields."

—CRABBE.

The Viper's-Bugloss came to us from Europe and gained its first foothold in this country in Virginia, thence made its way north along the coast to New England and Canada, and west to the valley of the Mississippi.

The flowers are clustered upon one side of a tightly curled raceme, which the books call a scorpoid inflorescence, because the stem curls like the tail of a scorpion. The color runs on the chord of blue. The flower-buds are pink; as they develop they become a most intense blue and they vary by age to reddish purple. The result is a very brilliant color scheme. Both stamens and pistil are rosy tinted and project beyond the corolla, which gives a touch of softness to the flower. The central stem branches freely and every branch is tipped with a blossoming raceme, and the result is that a well-grown specimen in bloom is a very gorgeous affair. Farmers, however, do not admire well-grown specimens, for the plant is a troublesome weed as its root system is strong and well developed, which makes it difficult of eradication. The entire plant is hairy and bristly from top to toe, so that it escapes all grazing animals. It produces abundant nectar and is visited by many insects. Müller reports having seen sixty-seven species about it—consequently it ripens many seeds.

The English name is Viper's-Bugloss, the specific name is from *Echium*, the Greek for viper. For an

explanation we must go back to the old theory of the Simplers, who held that nature had marked plants with some sign to indicate the special use for which each was intended. Now, as the stem of the plant is spotted and the shape of the seeds suggests a serpent's head, it was held that undoubtedly the herb would cure snake-bites.

VERBENÀCEÆ—VERVAIN FAMILY

BLUE VERVAIN

Verbèna hastàta

Verbena, Latin name for any sacred herb.

Perennial. Native. A tall, slender, leafy plant, branching at the top into many slender flower-stems which branch again into several lengthened spikes of small violet-blue flowers, but few at any time appearing upon the spike. In wet places, low grounds, and roadsides. Very generally distributed over the United States and Canada.

Stem.—Three to seven feet high, rough, grooved, four-sided, leafy, branched above.

Leaves.—Opposite, petioled, rough, lanceolate, doubly serrate, acute or acuminate; midrib and veins prominent; lower leaves sometimes lobed at base.

Flowers.—Pale violet-blue; in small groups moving upward upon slender, erect spikes at the summit of the stems.

Calyx.—Tubular, five-toothed, purplish.

Corolla.—Small, violet-blue, corolla tube slender, border about one-fourth to three-eighths of an inch across, five-lobed; several open at one time.

Stamens.—Four, in two pairs of unequal length.

Pistil.—Ovary four-celled; style short; stigma two-lobed, one of the lobes stigmatic.

Fruit.—Enclosed by the calyx, at length separating into four nutlets.

Pollinated by bees and flies. Nectar-bearing.

When a road crosses a small running stream, somewhere near the bridge or near the fence, where at least now and then its feet may stand in the water, one often finds the Blue Vervain, one's roadside companion from the Atlantic coast to the Mississippi River. The plant is a group of leafy wands, each surmounted by slender, graceful, compound spikes of small violet-blue flowers. The impulse of life mounts these stems from base to apex, and the result is that by midsummer each flowering spire bears ripening seeds below, a few blue blossoms midway, and buds in many stages at the top. The outcome is effective, and a group of well-grown plants beside a running stream is attractive and beautiful.

Blue Vervain. *Verbèna hastàta*

Verbèna hastàta is not the only Vervain by the wayside. Associated with it, often side by side in the same moist tangle, is the White Vervain, very much the same, only its flowers are smaller and white. The two are frequently joined by a third, an immigrant from Europe *Verbèna officinàlis*, the Vervain of the tradition and folk-lore to which our American plant can lay no claim. In general habit resembles the Blue

Vervain, its flowers are more purplish, possibly a little larger and a little more scattered. The leaves are variable, coarse, rough, serrate, lanceolate, or lobed, as it happens. This plant has now become naturalized on both Atlantic and Pacific coasts. The general effect of all the Vervains is very similar.

When the reputation of many of these famous plants of the Middle Ages is compared with their real value, it becomes exceedingly difficult to explain the basis upon which it all rested; or to comprehend how any such view arose.

The European Vervain was known as Herb-of-the-Cross, Holy Herb, Enchanter's Plant, Juno's Tears, Simpler's Joy. Moreover, these are but a few of the many names testifying to the plant's virtue as a love-philter, a bridal token, a general cure-all. One asks in vain, Why? Virgil makes it a charm to recover lost love; it was revered by the Druids; was sacred to Thor; it was, and, perhaps, still is in parts of Europe, a defense against witches on midsummer eve. One sympathizes with Kipling, who writes:

> "Anything green that grew out of the mould
> Was an excellent herb to our fathers of old.
> Wonderful little when all is said,
> Wonderful little our fathers knew;
> Half of their remedies cured you dead,
> Most of their teaching was quite untrue."

LABIÀTÆ—MINT FAMILY

SKULLCAP

Scutellària integrifòlia

Scutellaria, a dish, from the form of the fruiting calyx.

A native perennial herb in moist borders of fields and wood, chiefly referred to the Atlantic coast. New England to Virginia. June–August.

Stem.—Six to twenty inches high, dividing into many branches, each becoming a leafy, flowering stem.

Skullcap. *Scutellària integrifòlia*

Leaves.—Opposite, upper leaves sessile, oblong; lower leaves ovate to lanceolate, sometimes subcordate at base, often crenate-dentate or cut; the leaves grow smaller as they ascend the stem.

Flowers.—Violet-blue, two-lipped, borne solitary in the axils of the leaves.

Calyx.—Swollen on one side, two-lipped, entire; the upper lip crested on its back.

Corolla.—Two-lipped, three-fourths of an inch long, minutely downy, a little swollen below the throat, then slightly constricted. Violet-blue, whitish underneath; upper lip darker than the lower; the lower lip spreading, broad, slightly notched at the middle.

Stamens.—Four, in two pairs, all anther-bearing, ascending under the upper lip; the upper lip somewhat shorter; anthers two-celled, downy; anthers of the lower pair one-celled, also downy.

Pistil.—Ovary four-parted; each segment developing into a rough, one-seeded nutlet.

Skullcap is not a very attractive name, and its only service seems to be to note the fact that as the calyx enlarges to accommodate its four nut-like seeds it develops a crest which gives it the form of a tiny helmet. Even the helmet must be searched for, and it, perhaps, would fit Puck if he needed such a thing. An interesting point about the blossoms is the habit of the pair starting opposite one another in the bud to swing round as they develop until they stand side by side. The corollas are close-lipped rather than gaping, the flowers solitary in the axils of the leaves, and also in terminal bracted racemes.

CATMINT. CATNIP

Népeta catària

The ancient Latin name of the plant supposed to be derived from *Nepete*, an Etrurian city.

Perennial. Found near dwellings and barns and along the roadsides. Naturalized from Europe, also native to Asia. New Brunswick and Quebec to South Dakota, south to Virginia and Kansas. Pleasing aromatic taste and odor. July–November.

Stem.—Downy, erect, branched, square and grooved. Two to three feet high.

Leaves.—Heart-shaped, scalloped, downy underneath; soft to the touch, fragrant.

Flowers.—Small, two-lipped, white dotted with purplish spots, in whorled clusters set in short, dense, round-topped, terminal spikes, which are one to five inches long.

Calyx.—Tubular, somewhat oblique, five-toothed, hairy.

Corolla.—Tube enlarged at the throat, strongly two-lipped; upper lip erect, notched, protecting the sta-

mens; the lower spreading, three-cleft, the middle lobe largest, and toothed.

Stamens.—Four, in two pairs, ascending under the upper lip; the lower pair shorter.

Pistil.—Ovary deeply four-lobed.

Pollinated by beetles, bees, and flies. Nectar-bearing.

Leaf of Catnip. *Népeta catària*

There is a certain curious relation existing between the domestic cat and this world-wide plant, and her wild delight over the aromatic odor of the Catnip represents a very elemental instinct.

We have no other common plant whose leaf is just like that of the Catnip. It is beautifully heart-shaped with scalloped edges, velvety to the touch, grayish-green, aromatic and fragrant. Sometimes it is beautifully marked with white. The tiny, gaping flowers are gathered into whorled clusters which are set in short, interrupted, blunt spikes. The general effect of a whorl of blossoms is a background of whitish pink covered with innumerable little dots.

One should always look for Pussy's friend near barn and garden; the plant naturally takes on a bushy form, it consorts in waste places with the Burdock and the Black Mustard, sometimes it follows a fence a considerable distance.

Catnip was once, and possibly still is, a domestic remedy for children's stomach troubles and colds.

SELF-HEAL. HEAL-ALL

Brunélla vulgâris. Prunélla vulgâris

Said to be named from the German *Braune*, a disease of the throat for which this plant was a reputed remedy.

Perennial. One of the ever-present weeds of roadsides and fence corners, creeping into lawns, where it becomes a pest. Naturalized from Europe. June–October.

Stems.—Square, grooved, low, two to twelve inches high, leafy, usually sprawling.

Leaves.—Opposite, oblong, oblong-lanceolate, acute, margins slightly toothed, entire, or crenate, petioled.

Flowers.—Small, violet-purple, two-lipped, in dense terminal spikes suggesting at first a clover head, but later becoming longer and four-square. Few flowers in bloom at any one time.

Calyx.—Tubular, two-lipped; upper lip with three short teeth, lower lip two-cleft. Closes in fruit. Large heart-shaped bract at base.

Corolla.—Small, violet-purple, rarely white, two-lipped, gaping. The upper lip is the darker and hoodlike; the lower lip is the paler, spreading, three-lobed, the middle and largest lobe fringed.

Stamens.—In two pairs, ascending under the upper lip. Filaments of the lower and longer pair two-toothed at the summit, one of the teeth bearing an anther, the other sterile.

Pistil.—Ovary deeply four-lobed, which in fruit forms four, round, smooth nutlets.

Pollinated by bumblebees, honeybees and flies. Nectar-bearing.

"The Lord hath created medicines out of the earth and he that is wise does not abhor them."—Ecclesiasticus xxx : 8.

Self-heal is a plant that attends the traveller's way on the roadsides of three continents; it inhabits the lawns and dooryards, lives on the edge of the garden, looks into wayside ditches, is ubiquitous, persistent, and gifted with the will to live. The plant is usually rusty and dusty, the stem erect, but when thrown down can root at the joints. Its long, flowering season enables it to seize an opportunity whenever one comes, and as a result it has triumphed, though the conditions under which we find it are usually adverse. The lawn-mower shaves it almost to extinction, the garden hoe is its daily enemy, but, now and then, when the fates agree, one is surprised at the real beauty of the plant, fresh and clean with its charming little purple-violet flowers, few in number, gathered about its green clover-like head.

Self-Heal. *Brunélla vulgàris, Prunélla vulgàris*

The plant was named by the Simplers, those makers of the *materia medica* of the Middle Ages. The Simpler's theory of medicine was delightfully simple; it is known as the doctrine of signatures which was the belief: First, that nature provides a plant to cure

every human disease and, second, that this plant bears either in leaf or flower or fruit some resemblance which guides man to its selection. Now the flower of the Self-heal consists of a throat and an open mouth, hence, it was supposed to be an infallible remedy for sore throat. The older name of the plant and the significant one is Brunella, but this was altered by Linnæus into Prunella. No pent-up Utica limited the virtues of this plant in the day of its reputation, for it was regarded as a cure-all, a specific for all the diseases that flesh is heir to.

This wonderful herb is a Labiate, belongs to that two-lipped, square-stemmed sturdy clan, but it possesses a distinctive personality notwithstanding. The flowers and bracts are arranged in regular tiers about the square flowering head, each tier a ring of blossoms supported by two spreading green bracts. The number of tiers varies from six to ten. Out from these protecting bracts projects a two-lipped corolla of exquisite beauty marked by varied tints of violet. The plant is a tireless bloomer; and the flowering heads elongate in ripening sometimes to four to five inches, becoming coarse and brown.

MOTHERWORT

Leonùrus cardìaca

From the Greek, *leon*, a lion, and *oura*, a tail; from a fancied resemblance of the blooming stem to a lion's tail.

Perennial. Naturalized from Europe. An outcast from the garden, having lost its medicinal repute; lingers about walls, waste places, and roadsides. Nova Scotia to North

Carolina, west to Minnesota and Nebraska. June–September. The dried leaves and blooming tops are still quoted in the drug market.

Stem.—Two to four feet high, leafy, square, purplish, hollow; dividing toward the summit into several blooming branches.

Motherwort. *Leonùrus cardìaca*

Leaves.—Opposite, on slender petioles; deeply and prominently veined; lower leaves, round in outline, two to four inches broad, palmately cut into five, sharp-pointed lobes; upper leaves three-cleft, narrowed at base, the lobes lanceolate, the middle one the largest.

Flowers.—Small, pink, two-lipped, woolly, in dense whorls in the axils of two opposite leaves.

Calyx.—Tubular, bell-shaped, with five awl-like spreading teeth; stiff and sharp.

Corolla.—Two-lipped, pink or pale purple or white. Upper lip oblong and entire, either flattish or vaulted, densely bearded; lower lip spreading, three-lobed; lateral lobes oblong, middle lobe largest, entire.

Stamens.—Four, in two pairs, ascending under the upper lip of the corolla. Anthers deep red.

Pistil.—Ovary deeply four-lobed; style two-cleft. Nutlets three-angled.

Motherwort once had a great reputation as a domestic remedy, but having lost that, it has become an

outcast from the garden though it still lingers about old dwellings, hugs up against walls, wanders along roadsides, and never strays very far from the habitations of man. Before the blooming period sets in the plant appears as a full flowing tuft of leaves which apparently are all points. In gardens its career is usually ended at this point by the gardener's hoe, so it is only the roadside vagabond that can count on longer life.

In July the flowering stems appear, lengthen, and branch, and finally each one is decorated with numerous little wreaths of adorable, woolly, pink-purple, gaping flowers, which hug the stalk in the axils of each pair of pointed leaves.

The upper leaves of the flowery stalk are three-lobed instead of five, becoming smaller and smaller as the top is reached. The opposite pairs of leaves are set at right angles, so that from one point of view the stem looks leafy, from another it does not. A prosperous flowering stem will bear from ten to twelve woolly wreaths, and each will ripen a dozen or more groups of nutlets, so there is little danger that the Motherwort will perish from the land.

BEE-BALM. OSWEGO TEA. FRAGRANT BALM

Monàrda dìdyma

Monarda, after Nicholas Monardes, a Spaniard who published in 1571 a book containing the earliest picture of this American plant.

Rather coarse, perennial, native plant, growing in tufts, bearing clusters of deep scarlet, two-lipped, gap-

ing flowers. Found on the banks of woodland streams in hilly country and sparingly transferred to gardens. New England, Ontario and Michigan, south to Georgia. July–September.

Stem.—Three to four feet high, square, rough-hairy, reddish toward the summit.

Leaves.—Opposite, ovate or ovate-lanceolate, petioled, serrate, acuminate, three to six inches long; midrib and veins conspicuous and sometimes reddish.

Flowers.—Borne in dense terminal heads or in axillary clusters, deep red, two-lipped, gaping. Bracts commonly red.

Calyx.—Long, tubular, narrow, many-nerved, five-toothed, reddish.

Corolla.—Deep red, two-lipped, long, gaping; upper lip erect; lower lip three-lobed, the narrow middle lobe slightly notched.

Stamens.—Two, ascending and looking out under the upper lip of the corolla, inserted on the corolla-tube.

Pistil.—Ovary deeply four-parted; style long and slender; stigma two-lobed.

Fruit.—Ovary ripens into four akenes.

Pollinated by humming-birds, bumblebees, and butterflies. Nectar-bearing.

A strikingly handsome plant when in full bloom; dwelling of choice in the tangle of bushes and vines by the side of a shady woodland stream where the ground is moist. One looks for it in the hill country rather than on the plain, but of late years the splendor of its color has appealed to gardeners and landscape artists so that one finds it in cultivated grounds, perhaps, oftener than in the wild.

The plant grows in tufts and bunches, the heads

are hemispherical and sometimes a flowering stem bears two terminal heads one above the other. Like so many of the mints; bracts, calyx, corolla, stamens, and pistil all take on the glow of the dominant color. The long-throated corolla, often a full inch and a half, gives its nectar to the humming-birds and the bumblebee; honey-bees and wasps, however, are wise and wary, and cut holes through the base of the blossom.

Bee-Balm. *Monarda didyma*

It should be a roadside plant, but rarely is, except along unfrequented paths for, like the flame of the red-bird's wing or the tanager's coat, its color betrays it to the thoughtless or childish passer-by, who plucks the blossoms on impulse and throws them away after brief attention. If, however, you chance upon it in the tangle you may catch the shadow of vibrating wings, or hear the deep bass of the bumblebee or watch the butterflies as they come and go; for the honey-call is borne afar by the fragrance carried on the passing breeze.

WILD BURGAMOT

Monàrda fistulòsa

Perennial. Native. Growing in tufts and bunches and bearing many pale lavender two-lipped flowers in terminal heads. New England, Ontario, and Minnesota and south to Georgia. June–September.

Stem.—Slender, two to three feet high, square, rough, branched, each surmounted with one or more flower-heads.

Leaves.—Opposite, ovate or lanceolate, serrate, acute or acuminate, petioled, aromatic.

Flowers.—Clustered in a solitary terminal head; variable in color, mostly pale lilac or lavender, sometimes cream-white.

Calyx.—Tubular, narrow, five-toothed, hairy within; bracts whitish or purplish.

Corolla.—Inch to inch and a half long, two-lipped, upper lip erect; lower lip spreading, three-lobed, middle lobe longest.

Stamens.—Two, inserted in the throat of the corolla and protruding.

Pistil.—Ovary four-lobed; style two-cleft at apex.

Fruit.—Four nutlets.

Pollinated by bees and butterflies. Nectar-bearing.

Wild Burgamot is a western rather than an eastern species, though found throughout New England. In northern Ohio it appears in such abundance as frequently to cover neglected fields with a pale lavender mist. The character of the flower-head producing but few flowers at a time materially lengthens the blooming period.

The plant grows in tufts with many slender stems

Wild Burgamot. *Monàrda fistulòsa*

from a single fibrous root and is neither so tall nor so brilliant as its red brother the Bee-Balm; but it possesses a delicate beauty in mass which is all its own.

SPEARMINT. GARDEN MINT

Méntha spicàta. Méntha viridis

Mentha, from a nymph of that name, fabled to have been changed into Mint by Proserpine.

Spearmint. *Méntha spicàta*

Perennial by leafy stolons. Naturalized from Europe. A plant found in wet places near cultivated grounds, and roadside streams and ditches.

Stems.—Square, smooth, branching; one to two feet high, often stained with purple.

Leaves.—Opposite, ovate or narrowly oblong, serrate, acute, noticeably veined, short-petioled; strong aromatic taste and used as a flavoring for meat sauces and cooling drinks.

Flowers.—Small, pale bluish or pinkish purple, in whorls, forming terminal, interrupted, slender, acute spikes, two to six inches long; the central spike longer than the lateral ones.

Calyx.—Minute, bell-shaped, five-toothed.

Corolla.—Small, tubular, four-cleft, slightly irregular, without hairs.

Stamens.—Four, equal.

Pistil.—Ovary four-lobed, producing four nutlets, ovoid, smooth.

Spearmint is one of our Sweet Herbs naturalized from Europe, and now found very generally growing

wild in wet places near cultivated grounds; sometimes its leafy stems fill up narrow ditches. The leaves possess a pleasant aromatic taste and fragrance, due to a volatile oil which is soluble in water.

The stems are square, smooth, often stained with purple, the conspicuously veined leaves opposite on the stem, and small stems and leaves are often in their axils. The tiny purplish flowers appear in small bracted whorls one above the other, with a space between, forming slender terminal spikes. These spikes are especially narrow and pointed, this characteristic distinguishing them from the spikes of Peppermint, which are obtuse and which they otherwise resemble.

PEPPERMINT

Méntha piperita

Perennial. Naturalized from Europe. Moist grounds and shores of streams; cultivated.

Stem.—Erect, square, smooth, branching; two to three feet high, often stained with purple.

Leaves.—Opposite, broad oval or ovate, serrate, acute, short-petioled, noticeably veined.

Flowers.—Whorls of pale-purple flowers, in obtuse spikes both terminal and axillary. In time the lateral spikes overtop the terminal one.

Calyx.—Bell-shaped, five-toothed.

Corolla.—Tubular, four-lobed; one lobe a little broader than the other, pale pink.

Stamens.—Four, erect.

Pistil.—Four-parted, producing four nutlets.

Peppermint, a naturalized plant from Europe, delights to grow beside running streams where the water,

two to six inches deep often spreads out into shallow runlets and wet, gravelly places. The blossoms are tiny, pink, four-toothed, erect bells, set in small, green calyx cups and clustered about the stem in whorls which are gathered into interrupted blunt terminal spikes.

The odor of the plant is peculiar and penetrating, its taste pungent. In medicine the oil is used as a stimulant, it is also a popular flavoring for candy.

The cultivation of the plant is a very considerable industry both in this country and in Europe. Authorities say that the plant may be grown on any land that will produce good crops of corn, but its cultivation is most profitable on soils of reclaimed swamps. The crop is cut with scythe or mowing-machine, dried like hay and then taken to a "mint still," and the oil extracted by distillation with steam.

SOLANÀCEÆ—NIGHTSHADE FAMILY

NIGHTSHADE. BLUE BINDWEED

Solànum dulcamàra

Solanum, quieting, in reference to the poisonous character of the genus.

A perennial vine on roadsides, moist banks in waste places and around dwellings. Naturalized from Europe. New Brunswick to Minnesota, New Jersey, Pennsylvania, and Kansas. May–September.

Nightshade. *Solànum dulcamàra*

Stem.—Climbing, scrambling, and straggling, somewhat woody below, often stained purple. Two to seven feet high.

Leaves.—Petioled, two to four inches long, heart-shaped, ovate or hastate in outline, acute or acuminate, entire, three-lobed or three-parted, with the terminal segment much the largest; veining marked and midrib prominent.

Flowers.—Blue-purple, or white, borne laterally in loose, compound clusters.

Calyx.—Bell-shaped, five-lobed; lobes short, obtuse, persistent at the base of the berry.

Corolla.—Wheel-shaped, five-lobed; lobes lanceolate, acute, reflexed.

Stamens.—Five, inserted on the throat of the corolla; anthers oblong, grown together into a cone and discharging pollen by a terminal opening.

Pistil.—Ovary two-celled; style slender, protruding from the anther-cone; stigma small.

Fruit.—Oval or globose berry, size of a pea, red, shining.

Among the thick foliage of Wild Grape and Virginia Creeper that billows over the fences and drifts along the roadside of highway and byway in early August, one often sees the clusters of bright purple flowers of the Nightshade as well as the shining scarlet berries. This plant dwells of choice where the road dips to the moist land, it loves damp, shady places, streams and ditches.

The Nightshade is better than its reputation. Its individual flowers, each a yellow cone of anthers on a violet star, hanging in spreading and nodding clusters, are attractive and beautiful. The blossom is of the *Solànum* type, a more or less sinister form. The family bears in its bosom many of the deadliest plants of the world. At the same time it includes many of our most useful ones—the Potato, the Eggplant, the Tomato, the Pepper, to name a few of those well known.

The plant has a peculiar juice which is at first sweetish to the taste, afterward becoming bitter.

DATURA JIMSON-WEED

Datùra stramònium

Datura, altered from the Arabic name Tatorah.

Annual. Naturalized from Asia. A well known, ill-scented weed, in waste grounds, especially of cities, bearing large, showy, white, bell-like flowers in the forks of the branching stem, which are followed by large prickly seed-vessels.

Stem.—Stout, smooth, branching, one to three feet high.

Leaves.—Large, smooth, ovate, with an irregular wavy toothed margin. Deeply veined, long-petioled.

Flowers.—Large Morning-Glory-like flowers, white, opening in the afternoon with heavy odor. Erect and solitary in the forks of the branches.

Calyx.—Large, tubular, five-toothed, angular, separating transversely above the base in fruit, the upper part falling away.

Corolla.—Funnel-form, deep-throated, with a large and spreading border, five-toothed, plaited.

Stamens.—Five, inserted on the corolla.

Pistil.—Ovary one; style one; stigma two-lipped.

Fruit.—Globular, prickly capsule, two to four-celled; seeds rather large and flat.

Pollinated by moths and butterflies. Nectar-bearing.

The common name of this vagabond from Asia emphasizes the fact that it made its earliest appearance in this country on the Virginian coast, and was first really identified at Jamestown, hence its early name Jimson-Weed, which, since the schoolmaster has been abroad, has been changed to Jamestown-Weed. It is believed that the seeds came originally in ballast that chanced to be dumped at Jamestown and so the plant first appeared there. Well known in Europe, it is there regarded as a native of Asia.

The vagabond habits of this ill-smelling weed, since no garbage pile or waste ground is too gross for its home, rouse our prejudices against it and make us think that the plant itself is unsightly, which really is not the case. The following description gives, perhaps, the general state of mind regarding it. "Jim-

Datura. *Datùra stramònium*

son-Weed, a poisonous thing with a loathsome odor. In its perfected growth it is a most uncanny plant; a strong, low bush with bat-like leaves of dark green, and long, pale lavender, lily-like flowers followed by a round, spiked seed-vessel." The general feeling of disgust is well expressed by this writer. The buds expand late in the afternoon and the rank odor serves the purpose of attracting nocturnal visitors, of which one of the most frequent is the sphinx-moth.

SCROPHULARIÀCEÆ—FIGWORT FAMILY

COMMON MULLEIN

Verbâscum Thâpsus

The generic name first used by Pliny is thought to be a corruption of *barbascum*, with beards; in allusion to the velvety leaves. *Thapsus* because the plant was very abundant in the neighborhood of the city of Thapsus.

Biennial herb with stout stems bearing a clumsy spike of seed-vessels, flowers, and buds. Naturalized from Europe. June–November.

Stem.—Stout, leafy, two to seven feet high, densely woolly, winged by the decurrent bases of the oblong leaves; often dividing at the summit into two to seven branches.

Leaves.—Basal leaves thick, pale green, velvet-hairy, oblong, forming a rosette on the ground. Stem leaves alternate, sessile or clasping, the petioles running down the stem. The hairs that cover the surface are curiously branched and felted.

Flowers.—Pale yellow, fleeting, very few in bloom at any one time, borne in large, thick, terminal spikes.

Calyx.—Five-parted, woolly.

Corolla.—Yellow, wheel-shaped, with five rounded and spreading lobes.

Stamens.—Five, protruding, inserted on the base of the corolla, unequal; the three upper short with pale, hairy filaments and short anthers; the two lower nearly smooth with larger anthers.

Common Mullein. *Verbáscum Thápsus*

Pistil.—Ovary two-celled; style dilated and flattened at the summit.

Fruit.—Many-seeded capsule; seeds rough.

Pollinated by flies.

In midsummer the Mullein stands on the sunny hillsides, spreading the pale, grayish green of its velvet leaves over rocks, little hillocks, and hollows, and lifting its clumsy flower-stem three to seven feet above the base. The plant is biennial and usually among and between the flowering plants is a liberal sprinkling of seedling rosettes. These rosettes are conspicuous long before the flowering stem appears.

The Mullein possesses a number of the qualities of a successful weed. The root digs deep so that the plant endures with composure the fierce sunlight, as well as prolonged drought in the dry exposed situations where it grows. The felted hairs of the leaves serve well in both winter and summer conditions, prevent undue respiration in the heat of summer, and form a protecting blanket against the cold of winter.

The flower-stalk is long, crowded with blossoms and the flowering period begins early and ends late. The blossoms are crowded and irregular, but normally there should be a five-lobed calyx, a yellow wheel-shaped corolla with five, unequal, rounded and spreading lobes. There are five protruding stamens, the upper three bearded below the anthers, the lower two much longer and smooth. At first they stand straight out with the style between them, later they curve upward and the stigma protrudes one-sidedly below. Color of corolla varies from lemon-yellow to white,

filaments are pale yellow, anthers and pollen, orange. The fruiting capsule opens four-square and frees the tiny seeds which are loved by the goldfinches; one often sees flocks of the little black and yellow fellows feeding from the open cups that rapidly follow the flowers up the stem. The plant in favorable locations and in full flower is one of dignity; it suggests a sentinel on the hill; later it stands brown, dismantled, dishevelled, a cumberer of the ground.

The plant is abundant in southern Europe where, we are told, it possesses forty different folk-lore names. The dry stem is strong, woody, and loosely cellular so that it readily soaks up oil or melted tallow and was extensively used in the Middle Ages as a torch in funeral ceremonies. Moreover, it made the hag-taper used in the incantations of witchcraft. The leaves were utilized for lamp-wicks by the Greeks. In domestic practice Mullein tea was a favorite remedy for coughs and throat irritation.

Mullein came to us by way of the Atlantic seaboard, the seeds brought originally no doubt in ballast. It has wandered as far west as Kansas; it is also found in California, having come doubtless by way of the sea.

MOTH MULLEIN

Verbáscum blattária

Biennial. Naturalized from Europe. A plant of meadows, fields, and waysides. Quebec to Minnesota, south to Florida and Texas. June–November.

Stem.—Usually simple, often hairy, one to three feet high.

Leaves.—Alternate, oblong, ovate or lanceolate, with irregular dentate margin; the upper leaves heart-shaped or clasping at base.

Flowers.—White or yellow, on short peduncles, borne in long, loose terminal racemes.

Calyx.—Five-parted, with slender, recurved tips.

Corolla.—White or yellow, wheel-shaped, slightly concave, five-lobed; lobes a little unequal, the upper exterior, at least in the bud. Fragile, drops easily.

Stamens.—Five, unequal; filaments covered with violet hairs; anthers orange, conspicuous.

Pistil.—Ovary one; style dilated and flattened at the summit.

Fruit.—Globose, depressed capsule, many-seeded.

Moth Mullein.
Verbáscum blattária

The Moth Mullein has singularly attractive flowers, in structure very similar to those of the Great Mullein, though growing on quite a different stem and considerably larger, often an inch across. What one notices at first is the purple-violet heart of the blossom emphasized by the five orange-yellow anthers. The buds are flat and five-angled, and suggest green buttons. The plant is often seen in meadows in August, standing one to two feet high, evidently stems that by height or weakness had escaped the mowing-machine. Whether the corolla cups are white or yellow the centres are violet-orange.

TURTLE-HEAD. SHELLFLOWER. CHELONE

Chelône glàbra

Chelone, Greek, tortoise, the head of which the corolla resembles.

A native perennial plant growing in ditches and beside streams. Newfoundland to Florida, and westward to the Mississippi. July–September.

Stem.—One to three feet high, erect, smooth, square, leafy, hollow, sometimes branched.

Leaves.—Opposite, lanceolate, serrate, acuminate at apex; narrowed at base; veins very marked beneath.

Flowers.—White, tinged with pink or all white, about an inch long, growing in a dense, terminal spike-like cluster; lower flowers blooming first.

Calyx.—Five-parted, bracted at base.

Corolla.—Irregular, broadly tubular, two-lipped; upper lip arched, swollen, slightly notched; lower lip three-lobed, spreading, woolly within; front view flat, suggesting a reptilian mouth.

Stamens.—Five, two in pairs and one sterile; filament white, with short hairs; anthers white, woolly; pollen white.

Pistil.—Style white, long, slender.

Both the Greek and the English names of this plant emphasize the distinctly reptilian suggestion made by the corolla. The poise of the flower, the keeled upper part, the inflated lip and the small mouth, the flattened head, all produce a result that, if not strong enough to be a resemblance, is distinctly a suggestion.

Chelone is a rather common and familiar plant, which overlooks many a running stream and sees itself reflected in the water mirror of many a quiet pond.

The leafy, hollow stem is sometimes branched and rises about three feet. The sharp-pointed leaves are set in opposite pairs and their under surface shows distinctly many recurved veins.

Turtle-head. *Chelòne glàbra*

The large turtle-head flowers are white, flushed more or less with pink. The throat is filled with woolly hairs and the woolly stamens look with difficulty out from beneath the upper arch of the slightly gaping lip. The plant at one time belonged to the domestic *materia medica*, a decoction of its leaves being considered a tonic.

MONKEY-FLOWER

Mimulus ringens

Diminutive of *mimus*, a mimic actor.

Perennial by rootstocks. Native. A leafy plant bearing a few violet, two-lipped flowers, and growing in moist places, often in shade near a cool stream. Nova Scotia to Nebraska, south to Virginia and Tennessee. June–September.

Monkey-Flower. *Mimulus ringens*

Stem.—Smooth, hollow, erect; one to three feet high. Two of its sides are flattened and the other two are grooved; these flattened surfaces alternate with each pair of leaves.

Leaves.—Opposite, clasping or sessile, oblong, lanceolate, or oblong-lanceolate, acute or acuminate, obscurely serrate.

Flowers.—Violet, two-lipped, solitary in the axils of the leaves, three-fourths to an inch across.

Calyx.—Tubular, five-angled, five-toothed.

Corolla.—Irregular, two-lipped, tube cylindric; the upper lip two-lobed; lower lip spreading, three-lobed; lobes rounded, three-fourths to an inch across.

Stamens.—Four, white, in two pairs, included anthers meeting over the top of the pistil.

Pistil.—Ovary two-celled; style slender; stigma.

The square-stemmed Monkey-Flower is usually found in moist meadows or swamp land along cool streams, and often in the wayside ditch. The pretty blossoms open one or two at a time toward the top of a slender, leafy stalk. The plant is not conspicuous, and considerable imagination is required to see any resemblance to an ape's face in the open, two-lipped flower.

TOADFLAX. BUTTER-AND-EGGS. RANSTEAD WEED

Linària vulgàris

From *Linum*, flax, which the leaves of some species resemble.

A perennial herb, with erect, simple stems, one to three feet high; with narrow gray-green leaves and yellow flowers in a terminal spike, found in waste places and borders of fields. Naturalized from Europe. Nova Scotia to Manitoba, south to Virginia and Kansas. June–November.

Stems.—Erect, leafy, glabrous, or slightly hairy; one to three feet high.

Leaves.—Alternate or irregular, sessile, linear, entire; an inch or more long.

Flowers.—Orange and yellow, borne in a dense, terminal spike or raceme.

Calyx.—Five-parted.

Corolla.—Irregular, spurred at the base, two-lipped; the upper lip erect, two-lobed, covering the lower in the bud; the lower lip spreading, three-lobed; the middle lobe shorter than the other two.

Stamens.—Four, included, in two pairs; filaments threadlike.

Pistil.—One, two-celled; style slender.

Fruit.—Ovoid capsule, containing many winged seeds.

Pollinated by bumblebees and butterflies. Nectar-bearing.

"The flinty way for garland sighs,
The barren field fain would be fair,
Sun-beaten path for verdure cries—
Linaria hearkens to the prayer.

'Tis there her golden spikes arise
Of nectar-laden, gay-lipped cups,
'Tis hither wingèd hunger flies
And of her honeyed bounty sups."

One feels a certain sympathy with those renegade plants known as garden escapes: Toadflax, Bouncing-Bet, Muskmallow, and the rest, which have forsaken the seclusion of the garden for the freedom of the highways. These gypsies wander far from the home of the elect, and, wild and free, follow the open road wherever it leads.

Among this philistine group there is none more attractive and interesting than Butter-and-Eggs, once known as the Ranstead Weed and often called Toadflax. The story goes that Mr. Ranstead, living in the suburbs of Philadelphia, introduced the plant into his garden from England. No one would have objected had it stayed there, but this it elected not to do; it crawled under the fence and visited his neighbors who were market gardeners, and the outcome of the visits was that the plant received the name of Ranstead Weed. The name Toadflax is explained as expressing the resemblance between the mouth of the flower and the mouth of a toad. If a single blossom be picked and laid upon its back it may

easily suggest a young toad emerging from the tadpole stage, tail and all; the resemblance of the stems to flax accounts for the rest of the name. Butter-and-Eggs, of course, is a reference to the orange and yellow of the blossom.

A little plantation of Butter-and-Eggs is easily recognized, one sees it as a patch of gray-green by the roadside or just over the fence, which resolves itself into a body of erect stems thickly beset with linear leaves. At the summit of each flowering stem is a torch of orange and yellow. The flower flame creeps up the stem slowly, so that the blooming period is extended. The blossoms are an odd two-lipped form, and each has a pointed spur. They are bright yellow, except the little pouting lips which are orange. By pressing gently at the corners of the mouth we can force the lips apart, and then we see that the stamens and pistil are well within and that the nectar is down the throat. The lips close firmly, and a small creeping insect is quite unable to force an entrance; but when the bee comes her weight causes the lower lip to drop, she goes in after the nectar and comes out covered with pollen, which she carries to another flower, and the mouth closes again.

Butter-and-Eggs.
Linaria vulgaris

The blossoms appear in two forms, one the common two-lipped variety, and the other, not so common, in which the corolla has five spurs, is regularly five-lobed, and is then said to be in the peloria state. By

peloria state is meant the condition in which a plant that normally produces irregular flowers, produces regular ones. The earliest recorded observation of such a condition was made by Linnæus and upon our wandering Toadflax. Sometimes there are a few such in a flowering spike, sometimes an entire stem bears only regular five-spurred blossoms.

Yellow Gerardia. *Dasýstoma flàva*

DOWNY FALSE FOXGLOVE. YELLOW GERARDIA

Dasýstoma flàva. Gerárdia flàva

Dasystoma, Greek, thick or hairy mouth, referring to the corolla. *Gerardia*, in honor of John Gerarde, surgeon and botanist.

A perennial, native plant, dwelling in dry woods and thickets, and rarely found by the roadside. Massachusetts to Wisconsin, south to Georgia and Mississippi. July–September.

Stem.—Two to three feet high, obtusely four-angled, grayish, simple with a few nearly erect branches.

Leaves.—Opposite, oblong, lanceolate or ovate-lanceolate, entire, or the lower sinuate-dentate, sometimes pinnatifid; upper leaves passing into the bracts of the raceme.

Flowers.—Funnel-shaped, over an inch long, bright yellow, in terminal, leafy-bracted racemes.

Calyx.—Bell-like, five-lobed; lobes as long as the tube.

Corolla.—Funnel-shaped, much expanded above, five-lobed; tube filled with many short, soft, woolly hairs.

Stamens.—Four, in pairs, included, pubescent; filaments slender; anthers all alike.

Pistil.—Ovary two-celled, style threadlike.

Fruit.—Many-seeded capsule.

Downy False Foxglove is a very beautiful yellow flower, not common on roadside ways, preferring dry woods and thickets in hilly country.

It is interesting to note that the plant is credited with parasitic tendencies; indeed, Professor Grey reports that it has been caught in the act of preying upon the roots of the White Oak and of the Witch-Hazel by means of rootlets ending in tiny disks, which fasten to the roots of these plants and absorb their juices. It is not probable that these are the only victims. There is nothing in the general appearance of the plant to indicate any abnormal tendencies; stem and leaves are green, look fat, sleek, and well fed, the flower seems open-eyed and honest, yet the plant's reputation is not above reproach.

PENSTEMON. BEARD-TONGUE. FOXGLOVE BEARD-TONGUE

Penstèmon digitàlis

Penstemon, referring to the five stamens.

A native, perennial plant of the meadows, growing in tufts and bearing many clusters of white flowers. Maine to Illinois. May–July.

Stem.—Simple, tall, slender, sparsely leaved.

Leaves.—Lower and basal leaves oblong or oval, entire or repand, on long, narrow, margined petioles. Upper

leaves opposite, lanceolate or ovate, sessile and more or less clasping at the base, acuminate, sharply denticulate.

Flowers.—White, two-lipped, borne at the summit of the stem in a loose thyrsus-like panicle.

Beard-Tongue. *Penstèmon digitàlis*

Calyx.—Five-parted, segments lanceolate—often reddish.

Corolla.—Swollen, moderately two-lipped; throat open.

Stamens.—Five, four in two pairs, bearing anthers; the fifth without anther, bearded above.

Pistil.—Ovary one; style threadlike; stigma capitate.

Fruit.—Capsule ovoid; seeds many.

Pollinated by bees and bee-like flies. Nectar-bearing.

In northern Ohio, over the fence, rarely upon the roadside, are clumps and bunches of Penstemon,

sometimes in such abundance as to make large beds, then again only a few blossoming tufts stand among the tall grasses. A single root will have eight to ten stems, tall, slender, sparsely leaved, each bearing at its summit a loose, somewhat pointed cluster of flowers, white with reddish peduncles and reddish calyx lobes; sometimes the lower part of the corolla is pinkish.

The corolla, about an inch long, starts as a slender tube, then suddenly expands into a kind of Foxglove shape, moderately two-lipped, the upper lip two-lobed, the lower three-lobed after the fashion of two-lipped flowers.

The name *Penstèmon* emphasizes the fact that there are five stamens. Many blossoms possess five stamens and there is nothing particular said about it. But these stamens are different; four of them on bent filaments put their anther-heads together, surround the style and produce pollen; the fifth has no pollen duty to perform, but has a bearded, white tongue, slightly yellowed at the tip and lies in the middle of the lower lip. It may be a leader to the nectar, and it may be a discourager of ants; at any rate, there it is.

Many of the Beard-Tongue species are more or less pubescent, but *Digitàlis* is smooth in stem and leaf—and curiously enough the outside of the corolla is covered with little white glandular hairs which evidently would make matters extremely unpleasant for any crawling creatures especially ants, which tried to reach the nectar within the flower. Apparently that feast is prepared for the bee or bee-like flies only, and if stem and leaves do not defend it, the corolla itself will do so.

PLANTAGINÀCEÆ—PLANTAIN FAMILY

COMMON PLANTAIN

Plantâgo mâjor

Plantago, the Latin name, of obscure meaning.

Perennial, with a short, thick rootstock. Naturalized from Europe. A well known, stemless herb often a very troublesome weed. May–September.

Leaves.—Long-petioled, ovate or oblong, entire or coarsely dentate, ribbed.

Flowers.—Greenish white, small, in a long, slender, obtuse spike; often a stain of purple about the flowers.

Calyx.—Four, small, obovate, persistent sepals.

Corolla.—Greenish white, rotate, four-parted, withering on the pod.

Stamens.—Four, inserted on the corolla; anthers long, exserted after the corolla has opened.

Pistil.—Ovary two-celled; style at first projecting from the unopened corolla.

Fruit.—Ovoid capsule, cut across near the middle; eight to twenty-seeded.

Pollinated by flies. Stigma matures before the stamens.

> "Wheresoe'er they tread, beneath them
> Springs a flower unknown among us,
> Springs the White Man's foot in blossom."
> "Hiawatha"—LONGFELLOW.

Plantain is a weed of civilization, haunting the paths of man, it loves the places where he walks and

will dwell there by preference. It came into this country with the early settlers, and was called by the Indians, The White Man's Foot. A Scandinavian legend makes the plant the spirit of a maiden who sits waiting by the roadside for her faithless lover who never comes. The plant also bears the name Bird Plantain because canary-birds are fond of it.

Common Plantain. *Plantàgo màjor*

Like so many successful weeds, the Plantain forms a rosette of leaves thus pre-empting a certain amount of soil space for itself. From the centre of this rosette there come up a few naked scapes, bearing at their summit dense spikes of tiny four-parted blossoms whose pale and faded petals lie flat against the calyx. Before the corolla opens, the pistil matures and pushes out its style and stigma in order to get any disengaged pollen that is in the neighborhood. After the pistil has withered the corolla opens, the anthers mature and dangle out on cobwebby filaments, so as to scatter their pollen to the winds.

Ribbed Plantain. *Plantàgo lanceolàta*

The lower florets of the spike open first; if we pick a half-blown spike, we find all the pistils are ripe above, all the stamens ripe below. Were the order

reversed, the chances are that the florets would be self-fertilized and a successful weed should in the main be cross-fertilized.

Ribbed Plantain, *Plantàgo lanceolàta* is quite as pernicious a weed as Common Plantain and of late years even more abundant. An alien, it inclines to overrun meadows and pastures as well as yard and roadside. Its seeds are a very common impurity in commercial grass and clover seed; and so it is widely distributed. The plant blooms early and blooms late, each well-developed individual is credited with producing during the summer a thousand seeds.

RUBIACEÆ—MADDER FAMILY

PARTRIDGE BERRY. PARTRIDGE-VINE. TWIN BERRY

Mitchella rèpens

Named after Dr. John Mitchell, botanist and correspondent of Linnæus from Virginia.

A small, evergreen creeping herb, found abundantly in the woods. Native. Nova Scotia to Minnesota, south to Florida and Texas. May–September.

Stems.—Slender, trailing, branching; six to twelve inches long, rooting at the nodes.

Leaves.—Opposite, petioled, ovate-orbicular, rounded or heart-shaped at base, obtuse at apex; margin entire or wavy, dark green and shining; midrib prominent.

Flowers.—White, dimorphous, twin ovaries united, fragrant.

Calyxes.—Tubular, four-lobed. Of twin flowers united.

Corolla.—White, trumpet-shaped, four-lobed; lobes recurved, bearded on the inner side.

Stamens.—Usually four, inserted on throat of corolla. Dimorphous.

Pistil.—Ovary four-celled; stigmas four.

Fruit.—Composed of two united drupes bearing the remains of the two calyx lobes, containing eight rounded nutlets, berry-like.

Partridge Berry is one of the woodland plants that comes to the roadway on the mountain paths. One may believe it is the sunlight rather than any occult reason that makes it seek the roadway, but whatever

the reason, it comes. A pattern intricately traced of stems bearing opposite, orbicular leaves, lies flat upon the ground, and here and there among the prostrate foliage are bright scarlet twin berries, beautiful, decorative, and tasteless. If one is fortunate, sometime between June and September one may discover the

Partridge Berry. *Mitchella rèpens*

white twin flowers which produce this beautiful berry, but the berry itself is in evidence all the year; it knows no seasons. You will find it in midsummer, the leaves of autumn drift over it, you may dig it out from under the snow, it smiles up to you in the sunlight of April.

The plant is one of our smallest, prettiest, and most abundant of creeping herbs, whose evergreen leaves, fragrant twin flowers, and unusual berries make it an object of more than passing interest; once seen it is rarely forgotten.

These twin flowers are not only pretty but exceedingly interesting. They are noticeably large for the size of the vine, and as they always blossom in pairs they are the more striking. The twin corollas are trumpet-shaped, with four spreading, recurved lobes, whose inner surface is covered with fine, white, cottony hairs that fairly fill the throat of the corolla. The outer surface of the tube is shining and slightly flushed with purple at the tips; the flowers are half an inch long and the tubes often united. The little green calyxes are always united, and together they spring from the tip of a very short peduncle. The flowers are of two sorts: each has four stamens; in one, these are very short and the pistil very long, while in the other the conditions are reversed, the dark-tipped stamens protrude and the pistil is out of sight.

The fruit is a shining berry with two eye-like openings. Altogether the Partridge-Vine is an exquisite creature which confers distinction upon any place where it abides.

DIPSACÀCEÆ—TEASEL FAMILY

WILD TEASEL

Dipsacus sylvéstris

Name from Greek, *dipsao*, to thirst, probably because the united bases of the opposite leaves frequently form a little cup which will hold water.

Biennial. Naturalized from Europe. A tall, stiff, angular and prickly plant standing by the roadside in rows or in colonies; bearing in summer large, oblong, prickly heads with many small, lavender florets. At all other seasons of the year the brown stalks crowned with the brown heads stand erect, stiff, and forbidding. Maine to Minnesota and south to Virginia. July–September.

Stem.—Three to six feet high, stout, bristly, leafy; sending out a flowering stem from the axil of each upper leaf.

Leaves.—Opposite, lance-oblong, six to twelve inches long, sessile, entire, acuminate, prickly along the stout midrib; frequently a pair of leaves unite at the base and so form a cup. The seedlings form a full rosette, a foot or more in diameter.

Flower-heads.—Oblong-cylindric, three to four inches long, solitary at the summit of a long, stout peduncle, borne in the axil of a leaf. Pale lilac florets are densely packed upon these heads; each floret protected by a sharp, slender, stiff-pointed bract. Usually the florets open first at the middle of the oblong heads and the bloom continues both up and down. An involucre of several narrow, stiff, bristly leaflets curves upward as high or higher than the flower-head. Each flower sits in an enclosing, spiny scale longer than the flower.

Wild Teasel. *Dipsacus sylvéstris*

Calyx.—Cup-shaped, four-lobed, grown fast to the ovary.

Corolla.—Small, tubular, four-lobed, lavender.

Stamens.—Four, inserted on the corolla tube; anthers versatile, lavender.

Pistil.—Ovary one-celled; style threadlike; stigma oblique, dark lavender.

Fruit.—Akene crowned with the calyx lobes.

Pollinated principally by bumblebees. Nectar-bearing. Anthers mature before the stigma.

Upon country roads in early spring one sees standing stark, stiff, and black along the roadside fence the remnants of last year's flowering stalks of Teasel. They stand three to four feet high with four to ten oblong heads on stiff, angular stems. They have defied the winter and survived it. Hidden at the base of each truculent stalk is a rosette cluster of soft, green leaves, and by late June this year's stems appear, also stiff and prickly but green, bearing the promise of other flowers upon their four-edged arms. For a time the old and the new are mingled, apparently in equal strength and numbers, and then some day, without exactly knowing how it has happened, one finds that the old ones have mostly disappeared and youth holds sway.

The stem is tough, woody, and hollow, with ridges extending its full length and each ridge armed with spines wide at base and very sharp. It is impossible to take hold of it anywhere without being pricked by the spines. The leaves are worthy of such a stem, long-lanceolate, opposite, coarse of texture with a stiff, whitish midrib armed beneath with a row of long, white, recurved prickles. If one pair of leaves stands north and south, the next pair are east and west.

In June the oblong flower-head begins to blossom. In the Clovers the bloom begins at the base and moves upward, the Sunflower's florets open on the outer circumference and the flowering impulse moves toward the centre, but in the Teasel-heads the florets open in the middle zone of the great oblong heads, and the bloom moves toward apex and base with equal strength until the head shows two rings of florets receding from each other, one passing off at the base, the other at the apex.

The arrangement of these flower-heads is very interesting, at the summit of the stem is the largest head of all. In the cultivated species this is known as the king and brings the highest price in the market. In each axil of the first pair of leaves arises a long, stout flower-stem which bears a head, not quite so large as the king nor does it usually grow so high, though sometimes higher. The next pair below also produces two heads, and so on down to the two lowest pairs on the stem. In our wild species thirteen to seventeen heads is a very large number for one stalk to produce, five or seven is a more common number. Lavender is the flower color; corolla, filaments, anthers, style, and protecting bract—all are lavender, here and there a little darkened.

Botanically the plant is closely allied to the *Compositæ*, the main difference being in the fourfold instead of fivefold structure of the florets. The plant which wanders along the highway is *Dipsacus sylvestris*, of no commercial value, but it is blood brother to *Dipsacus fullonum*, which is the Teasel of commerce; both are of European origin.

The Fuller's Teasel, *Dipsacus fullonum*, is a plant

of unique commercial value, it closely resembles the Wild Teasel and is by many believed to be only a cultivated form; but there are a few specific differences, the principal one being that the spine of the bract enveloping the flower is stronger and more curved.

The plant has long been cultivated in Europe, and in 1840 its cultivation was begun in Onondaga County, New York, where it is still grown, but its area of cultivation has increased very little except that it is grown in Oregon.

The commercial value of the plant lies in the character of the bracts of the florets after the seed has matured. These are stiff, hooked, at the same time slightly flexible. The heads are cut in half, affixed to a revolving cylinder and used to raise the nap upon woollen cloth. The value of these heads varies with the soil and climate. The dry climate of France and the moist climate of England each produces its own variety, the best for a particular kind of work. The American Teasel is the best for making broadcloth and is exported for that use.

No invention can equal the natural Teasel-head for raising the nap on woollen cloth, because the bracts break at any serious obstruction, where a metal substitute in such a case tears the material.

CUCURBITACEÆ—GOURD FAMILY

WILD CUCUMBER. BALSAM-APPLE

Echinocýstis lobàta. Micrámpelis lobàta

Echinocystis, from two Greek words, one meaning hedgehog and the other bladder; referring to the inflated and prickly fruit.

A native annual vine found in rich, low grounds and beside streams.

Stem.—Smooth, angular and grooved, climbing high by means of tendrils; sometimes hairy at the nodes.

Leaves.—Alternate, petioled, palmately five-lobed; deep sinus at the base, veins prominent beneath, margin obscurely serrate; lobes pointed. Tendrils opposite the leaves, three to four-branched.

Flowers.—Monœcious; the staminate, greenish white, six-pointed stars in long slender compound racemes; the pistillate, one or more minute green flowers, consisting of calyx and pistil, in the same leaf axil.

Calyx.—Of staminate flower, bell-like, with six narrow, pointed lobes alternate with the petals.

Corolla.—Six lanceolate petals, united into an open, spreading star.

Stamens.—In staminate flowers, three; anthers more or less united.

Pistil.—Ovary minute, two-celled; stigma broad.

Fruit.—Oval, two inches long, fleshy at first, finally dry, covered with weak prickles, bursting at the summit, two-celled, four-seeded, the inner part fibrous, netted.

Seeds.—Large, dark, with thick hard coat.

The Wild Cucumber vine is often seen in cultivation climbing over arbors and on fences. The flowering of this vine is extremely interesting. The flowering racemes are abundant and frequently a foot long;

Wild Cucumber. *Echinocýstis lobàta*

even an ordinary raceme will produce more than one hundred staminate flowers. The puzzle is to find the pistillate flowers which are to produce the fruit. At the base of the long raceme, sometimes on its central stem and sometimes at the axil, is a minute green lump, which may be one and sometimes is several

pistillate flowers, so small that only a glass will enable one to separate them and so inconspicuous that they never would be seen unless sought for. But in time, if all goes well, each unobserved greenling will swell and swell, become fleshy and prickly, and finally produce four large, dark seeds. These seeds are found to be slow of germination due to the strength and thickness of the outer coat.

CAMPANULÀCEÆ—BELLFLOWER FAMILY

CREEPING BELLFLOWER

Campánula rapunculoìdes

Campanula, diminutive of the Latin *campana*, a bell.

Perennial. Naturalized from Europe. A rather rigid, leafy plant about two feet high, bearing a raceme of violet-blue bells. Escaped from gardens into roadsides and fields. Most abundant in New England and the Middle States, occasionally found in Ohio. July–September.

Creeping Bellflower. *Campánula rapunculoìdes*

Stem.—In tufts from a creeping root. Rather stout, leafy, two to three feet high.

Leaves.—Alternate, hairy, ovate-lanceolate, crenate-denticulate, pointed; the lower long-petioled and sometimes heart-shaped.

Flowers.—Blue bells, wide open; five-lobed, borne in an erect, one-sided raceme; each flower in the axil of a bract.

Calyx.—Five-cleft.

Corolla.—Bell-shaped, five-lobed, an inch or more long.

Stamens.—Five, free from the corolla; filaments broad at base.

Pistil.—Ovary three-celled; stigma three-lobed.

Fruit.—Capsule globose, nodding, opening near the base.

Pollinated by bees and flies. Nectar-bearing.

This European Bellflower has escaped from gardens and makes itself very much at home along the roadsides and in the meadows of southern Canada, throughout New England and New York, somewhat less often in Pennsylvania and Ohio. Its erect, rigid stem, set with long ovate leaves and crowned with a raceme of widely expanded purple-blue bells, has little grace but much vitality. It increases chiefly by runners.

BLUEBELLS OF SCOTLAND. HAREBELL

Campânula rotundifòlia

A native perennial, growing on moist rocks and in meadows from Labrador to Alaska, south to New Jersey and Nebraska. Europe, Asia, North America. June–September.

Stem.—Slender and branching; six to twelve inches high.

Leaves.—Basal leaves orbicular or ovate, heart-shaped at base, toothed or crenate, long-petioled, early withering. Stem leaves linear or lanceolate, entire, smooth.

Flowers.—Bright blue, nodding bells.

Calyx.—Five awl-shaped lobes.

Corolla.—Open bell, five-lobed.

Stamens.—Five.

Pistil.—Ovary three-celled; stigma three-lobed.

Campanula rotundifolia is the Bluebell of literature; a citizen of the northern world, growing in Europe,

America, and Asia. Living as it does in the clefts of rocks, waving its blue bells from inaccessible heights, apparently delicate and yet invincible, it is one of the few flowers that have appealed alike to the hunter, the wanderer, the naturalist, and the poet. On rocky banks and high ledges it is slender and delicate, its stems swaying in every breath of wind; when transferred to the garden it becomes sturdy and stocky. The plant is extremely variable in height, degree of branching, number and size of flowers, texture of foliage, shape and divergence of calyx lobes—characters which seem to stand in imperfect equilibrium, ready to respond to slight changes of environment.

Harebell. *Campânula rotundifòlia*

CARDINAL FLOWER. RED LOBELIA

Lobèlia cardinâlis

Named in honor of Matthias de L'Obel, a Flemish botanist—1538–1616.

Perennial. Native. Bearing the most brilliant red flower in our northern flora. Wet or low ground, beside streams, ditches, and meadow runlets. New Brunswick to the Gulf States, westward to the Northwest Territory and Kansas, common in Ohio. July–September.

Stem.—Two to four feet high, rarely branched, leafy, hollow; sending out offsets.

Leaves.—Alternate, oblong to lanceolate, slightly toothed, acute or acuminate, mostly sessile, the upper clasp the stem.

Flowers.—Brilliant vermilion, rarely rose or white. One to two inches long, two-lipped, growing in dense, terminal, erect, more or less one-sided racemes.

Calyx.—Five-cleft; lobes linear, acute.

Corolla.—Tubular, two-lipped, split down upper side. Upper lip two-lobed; lower lip with three spreading lobes.

Stamens.—Five, united into a tube around the style; anthers, varying in size, two with hairy tips.

Pistil.—Ovary two-celled; stigma two-lobed.

Fruit.—A two-valved capsule; seeds many.

Pollinated by bees. Nectar-bearing.

The Cardinal Flower is rarely found by the roadside, its color is too brilliant to escape marauders; but over the fence where a runlet makes its way through a meadow one often sees it following the course of the tiny stream and sometimes it appears in mass. Apart from its gorgeous color the corolla is interesting as a typical example of the Lobelia group. The two-lipped corolla has a long, slender tube which is split down the upper side its entire length, and through this the stamen tube and the style protrude. This is characteristic of the genus.

Although the plant has been transferred to the garden, it is happier by the brookside where the spring freshets will bring the water six inches or more deep, over its roots. Here established in the mud it will renew itself by seeds and offshoots as it will not do by the garden walk.

Cardinal Flower. *Lobèlia cardinális*

BLUE LOBELIA. GREAT LOBELIA

Lobèlia syphilítica

Perennial. Native. In moist soil. Maine and Ontario to South Dakota, south to the Gulf. July–October.

Stem.—Erect, angular, leafy, rather stout, usually simple, sometimes branching, one to four feet high.

Leaves.—Ovate, lanceolate, sessile or the lower petioled, narrowed at base, acute or acuminate at apex, unequally serrate.

Flowers.—Borne in a long, dense, leafy spike which is six to eighteen inches in length, bright blue marked with white.

Calyx.—Hairy, tubular, five-cleft, lobes eared at base, reflexed.

Corolla.—Tubular, irregular, cleft nearly to the base on the upper side, two-lipped; the upper lip cleft between the lobes; lower lip three-lobed.

Ovary.—Two-celled; style one; stigma two-lobed, fringed.

Fruit.—Capsule, opening at the summit; many-seeded.

The Lobelia family gives two of the most brilliant flowers of our summer fields, the glowing red of the Cardinal Flower and the clear, brilliant blue of the Great Lobelia. Both prefer moist homes. The Cardinal is the earlier, it glows under the midsummer sun; the Great Blue shows its color in August and lingers until October and frost. This Lobelia blue is one of the clearest given by petals, it is the blue of porcelain, intense and brilliant upon its color-chord, sometimes fading to white but not losing its purity.

A single well-grown individual from the flower-spike offers an interesting study. From the base of the

calyx to the tip of the lower lip it is about an inch and a quarter. The flower tube is somewhat swollen and often striped with white on the under side, cleft above from the calyx through the upper lip, dividing its

Blue Lobelia. *Lobèlia syphilítica*

lobes which are pointed and recurved. The lower lip is three-lobed and the lobes are long, heart-shaped, the middle one often white at the top. Through the cleft of the corolla and looking out between the two upper lobes are the anthers united into a bluish steel-colored tube, tipped with a tiny tuft of white hairs. Within is the long, green style, tipped with a two-

lobed stigma, itself surrounded by a ring of short, white hairs. The calyx lobes are hairy and eared.

A well-grown plant produces a mass of brilliant blue flowers which adorn the waysides from August until October. In the wild it will, under favorable circumstances produce flower spikes, twelve to eighteen inches long: if fed and protected doubtless would do far better.

In considering the possibilities of our wild plants one should remember that what they achieve of stalk and flower is done under the law of competition; they live where they must; they accomplish what they can. But relieved from this struggle for existence and placed in the less strenuous environment of the garden, if the essential conditions are congenial, the plant will improve.

COMPOSITÆ—COMPOSITE FAMILY

CHICORY. SUCCORY

Cichòrium intybus

Cichorium, from the Arabic name.

Perennial. Naturalized from Europe. In waste places, fields, often growing close to the wheel tracks of the roadway. Nova Scotia to Minnesota, south to North Carolina, Nebraska, and Missouri. July–October.

Root.—Strong, deep-growing, tap-root, used when dried as an adulterant of coffee.

Stems.—Two to four feet high, rigid, branching, rising from a rosette of leaves.

Leaves.—Basal leaves form in autumn a large rosette on the ground, often ten to twelve inches across. Three to six inches long, spatulate or obovate, with deeply cut or irregular margins narrowed into petioles. Upper leaves of stems and branches lanceolate or oblong, lobed or entire, clasping or eared at the base.

Flower-heads.—Ligulate-composite, pale blue, an inch or more across; all florets ray-flowers and fertile. Receptacle flat. Bracts of involucre herbaceous in two series; outer row somewhat spreading; inner row more erect. Anthers arrow-shaped at base, style branches slender. Akenes five-ribbed. Pappus of two or three series of short, blunt scales.

Pollinated by bees and flies. Nectar-bearing.

> "Not alone in upland pastures, dim and sweet,
> But by the dusty road, where tired feet
> Toil to and fro."

Along the way, near the fence and often over it, sometimes sharing with Ragweed the dust of the pass-

Evening Primrose. *Ónagra biénnis*
Chicory. *Cichòrium íntybus*

ing wheels, wanders the Chicory, an awkward, sprawling plant, bushy in form, sending forth strong woody stems up which the pale blue blossoms climb.

The plant is a composite, and the flowers in size and structure are similar to those of the Dandelion, all the florets being strap-shaped and fertile. At the base of the flowering stems is a cluster of spreading leaves lying on the ground.

The flower-heads appear singly or in twos and threes, alternate upon the lengthening stems which are from two to three feet high and which by midsummer have acquired a collection of ripening heads, opening flowers, and varied buds. At the end of the season the last flower surmounts the stem and surveys the wreck of summer's glory. The blossom is of exquisite beauty, every floret is a ray, every ray is fertile, and all are blue—pale, tender blue—"to match the sky." This blue varies with age and atmosphere, but the color is fundamentally blue. Short-lived, they last but a day, and once closed never open again.

This root dried and ground is universally used as an adulterant of coffee, which gives it a commercial value, and a perverted taste affirms that coffee is better when associated with Chicory. During the Civil War the plant was cultivated especially for this use, but after the war the industry languished and the seeds from the neglected plantations found homes for themselves. The plant is common in Ohio and westward but its chosen home seems to be New England, centering in Boston and its suburbs. At least in the morning, from June until October, the waste places of the city are illumined with the shimmer of a divine blue over the green of the grass and the tangle of weeds.

Chicory is a waif from the Far East. The name is clearly derived from the Arabic Chicourey. Another common name, Succory, is referred to the Latin *succurere*, to run under, in reference to the strong taproot which penetrates deep.

HARE'S LETTUCE. COMMON SOW-THISTLE. MILK-THISTLE

Sónchus oleràceus

A tall, usually single-stemmed annual, from one to five feet high, with large, spiny leaves, and pale yellow flower-heads; found everywhere in fields. Along roadways and fence rows. Naturalized from Europe. May–November.

Stem.—Stout, hollow, succulent, smooth, grooved, leafy below, nearly simple.

Leaves.—Alternate; large, decorative, basal and lower leaves petioled, lyrate-pinnatifid, the terminal segment, large and triangular, irregularly toothed with wavy margins edged with soft, weak spines. Upper leaves pinnatifid, clasping by an eared or arrow-shaped base and the uppermost often lanceolate and entire.

Flower-heads.—Ligulate-composite, that is, all florets strap-shaped or ray-florets. Pale yellow, three-fourths to an inch and a quarter across, borne in loose corymbose clusters, either terminal or axillary. Involucre bracts green, slightly united at base; involucre becoming thickened and conic at base when old. Receptacle flat, naked. Pappus abundant, white, silky.

This is one of the tall, leafy vagabonds of the wayside. In fact, there are three of them, brothers, distinguishable principally by their clothes, although these differ only in minor particulars. One, *Sónchus*

arvênsis, is perennial, possessed of deep roots and creeping rootstocks; the other two are annuals, found everywhere in fields and waste places. The blooming flower-heads of all the brothers are so similar in color and shape as to be an unmistakable family mark, thistle-like heads but small and pale yellow, and borne on leafy, branching stems. As soon as the flower-head is well opened, its base begins to enlarge to accommodate the growing seeds and becomes top-shaped, very broad at base and very pointed at apex.

Common Sow-Thistle. *Sónchus oleràceus*

The unpleasant, ugly name has no apparent application, but the English name Hare's Lettuce for *oleràceus* seems to have a certain justification in the belief that the strong basal leaves made a shelter for the hare under which he might find safety. Gerarde tells us that "if the hare come under it he is sure no beast can touch him." When the seeds ripen the involucre pours forth a great mass of white fluffy down. The books report that both species were formerly used as pot-herbs in the spring.

At the time the seeds mature, the bracts of the involucre fold backward and a beautiful tawny white ball of pappus appears, each group of silver wings carrying a golden-brown seed.

Sharp-fringed Sow-Thistle, *Sónchus àsperis* is the other annual species similar to the Common Sow-Thistle varying from it chiefly in the shape of the leaves which are obovate, pointed; undivided or lobed or sometimes pinnatifid; the upper leaves somewhat arched and slightly folded with irregular wavy margins that are thistle-like and fringed with many weak spine-like points. They clasp the long stalk with a conspicuous pair of eared lobes, are smooth and shining. Found in the wastes of the city.

FALL DANDELION

Leóntodon autumnàle

Leontodon, Greek, lion's tooth.

A perennial, roadside species, most abundant in New England especially about Boston. Naturalized from Europe, native also to Asia. It bears a rather small Dandelion head at the summit of a tall branching scape. June–November.

Stems.—A group of slender, branching scapes rising from a tuft of basal leaves; wiry, not tubular. Two to three feet high and set with tiny bracts or scales.

Leaves.—Narrowly oblong to linear-lanceolate; six to ten inches long, variously pinnatifid, the segments varying from narrow-pointed angular to bluntly toothed.

Flower-heads.—Ligulate-composite, that is, all ray-florets; several at the summit of a branching stem, about an inch across, resembling Dandelion heads. Involucre oblong, bracts in several series and different lengths. Receptacle flat, honeycombed. Rays truncate, five-toothed. Pappus of plumose, brownish bristles.

These autumnal Dandelions, smaller in flowering heads and taller in stature than the Dandelion of

springtime, have, nevertheless much of the charm of their elder brother though they lack the uplooking, sturdy, Dandelion poise. In color the blossoms are the same; looking down upon them, they seem faithful copies in a smaller mould, and, moreover, they possess one characteristic denied to our Dandelion. The flower-heads will remain open and the buds will bloom after they are picked.

The flowering stem rises about two feet above the rosette of narrow, lobed leaves, but the entire plant is so frequently overwhelmed in the summer tangle that the flower-heads only are in evidence. The pappus is brownish, plumy, and forms a pompon not a globe.

PRICKLY LETTUCE. COMPASS PLANT

Lactùca scarìola var. *integràta*

Annual or winter annual. Naturalized from Europe. All soils, common everywhere in waste places. New England to the Missouri River, very abundant in Ohio Valley and in the States bordering on the Great Lakes. July–October.

Stem.—Erect, with short, lateral branches, round, smooth, except for a few prickles near the base; two to five feet high, pale green, filled with milky juice.

Leaves.—Alternate, pale green, oblong, variable; often obtuse at tips, but sometimes acute, with wavy, toothed and prickled margins, sessile, or clasping with two ears at the base. Midrib white, closely set with spines on the under side. Leaves of plants growing in the open have a vertical twist at the base which causes their edges to point up and down; those in the shade do not have this twist.

Flower-heads.—Ligulate-composite, pale yellow, a quarter of an inch across, in an open panicle. Florets ten to twenty. Involucre cylindric, outer bracts shorter than inner; rays yellow; akenes oblong; pappus white, fine and soft.

A noxious weed often growing in the very dust of the roadside, of wide range due largely to the agency of impure seed grain. It flourishes in all soils and invades all crops. The plant may be easily identified by the white midrib of its leaves. At first it is a rosette of leaves, then a pale green, shapely, leafy stalk, then a blossoming candelabra of yellow florets or of fluffy pompons, finally a scraggly, dishevelled, dusty, upright stalk; its work done and only its skeleton lingering superfluous on the scene.

The success of this weed depends very largely upon its ability to live in dry situations and withstand the long droughts of summer. The leaves are arranged alternately upon the stem and can stand out horizontal to the stem or at a slight angle, but during the hot, dry days of summer standing in the open they exhibit a tendency toward what is known as polarity, that is, they turn and twist so as to show their edges and not their full surface to the sun, which relieves the plant from the effects of the sun's direct rays. It is said that our garden Lettuce when permitted to go to seed exhibits something of the same tendency.

The plant is protected against grazing animals by a row of prickles on the lower side of the midrib, there are also prickles on the stem, and the leaves are toothed at their points and bristling along their edges.

Anna B. Comstock writes most interestingly about

Prickly Lettuce. *Lactùca scarìola*

the way the leaves place themselves when the heat becomes too great.

"The long, oblong leaf has a thick, fleshy midrib, and at the base are developed two pointed lobes which clasp the stalk. The leaf is soft and leathery and always seems succulent, because it retains its moisture; it has a ruffled edge near its base, which gives it room for turning without tearing its margin. Each leaf tips over sidewise toward the stem, and as far as necessary to bring one edge uppermost. Thus the sun cannot reach its upper surface to pump water from its tissues. The ruffled margin of the upper edge is pulled out straight when the leaf stands in this position, while the lower margin is more ruffled than ever. Thus it stands triumphantly, turning edgewise to the sun, retaining its moisture and thriving when cultivated plants are dry and dying."

The plant is an especial pest in the wheat-fields of the West, in that the hard stems dull the reaping knives, and the milky juice makes the weed very troublesome in thrashing-machines when the crop is thrashed immediately after reaping, without drying in the shock, as is so frequently done in the West.

In order to grasp the necessity of cutting down such noxious weeds one has only to cut a well-grown specimen in flower and count the heads, in bud, in bloom, and in seed. Such a plant, under rather than over size, bore three hundred and twelve heads, and averaging fifteen florets for each head all of which were fertile, gives a total of over forty-five hundred seeds, each one equipped with a plumy parachute to carry it whither the wind pleased.

The Willow Lettuce, *Lactuca saligna*, very similar to

scariola in habit and appearance, but with runcinate-pinnatifid lower leaves and spiny midribs is fairly abundant in northern Ohio.

WILD LETTUCE. TALL LETTUCE

Lactùca Canadênsis

Biennial or annual. A leafy stem, often six feet high, with lower leaves irregularly lobed or pinnatifid, twelve or more inches long and lessening in size as they ascend the stem. In moist, half-shaded places at the edge of woodlands and thickets and along fences. Nova Scotia to the Northwest Territory, south to Georgia, Louisiana, and Arkansas. July–November.

Leaf and Flower of Tall Lettuce.
Lactùca Canadênsis

Stem.—Three to ten feet high, erect, strong, leafy up to the inflorescence; with milky juice.

Leaves.—Alternate, six to twelve inches long, variable, mostly sinuate-pinnatifid, the upper often lanceolate and entire, sometimes all the leaves are narrow and entire, except the lowest.

Flower-heads.—Ligulate-composite, that is, all perfect ray-florets; borne in a long, bushy loose panicle of many stems. Heads small, pale yellow, about twenty-flowered. Involucre cylindrical; scales in sets of unequal lengths; akenes oval, bearing very soft, white pappus.

Noticeably a tall and leafy stalk rising from three to ten feet in moist, open places at the edge of a thicket

in July and August. As it appears by the roadside before it blooms, it stands a plant of dignity and beauty, like a seneschal of the highway. The flowering head appears at first as a short, green club which soon develops by easy stages into a loose, bushy inflorescence consisting of many buds, few flowers, and a fair collection of pappus pompons during the entire flowering period. At this time the strength of the plant goes to the production of seed and a general collapse sets in. The individual flower-heads are small, a quarter of an inch across, pale yellow and followed almost immediately by pappus pompons which do not delay in their coming but appear at once. This ability to mature seed so soon marks the efficiency of the plant.

Leaf and Flower of Red Wood-Lettuce. *Lactùca hirsùta*

The leaves are exceedingly variable in size and shape, the lower sometimes a foot long and very irregularly cut, gouged, and wavy-lobed, usually sessile. As the leaves ascend they change in shape becoming smaller, sometimes sharply angular and few-lobed.

Hairy or Red Wood-Lettuce. *Lactùca hirsùta* is very similar to *Canadénsis* but commonly smaller. The two are usually neighbors. The stem is dark reddish purple, less leafy, the leaves eared at the base and often clasping, with fewer lobes, usually, and these angular and entire. The small flower-heads, about

one-fourth inch across, are red, reddish yellow, or orange, quite a different color from those of *Canadensis*, but are so few in bloom at any one time as not to make much of a show.

DAISY FLEABANE. SUMMER FLEABANE

Erîgeron ánnuus

An ancient Greek name.

An annual plant bearing small Aster-like flowers, borne in loose, flat panicles at the top of a stem two to three feet high. Found almost everywhere, sometimes abundant in fields, scattered along roadsides, and often in the leafy tangle along the edge of woodlands. Nova Scotia to the Northwest Territory, south to the Gulf. May–November.

Stem.—Two to three feet high, slender, hollow, hairy, and leafy.

Leaves.—Alternate, lanceolate, tapering toward the point and narrowing into a petiole at the base. Thin in texture, velvety beneath, midrib prominent, margin coarsely notched into sharp teeth. They graduate in size from the foot of the stalk, becoming very small and narrow as they ascend, the margins entire, and the leaf sessile.

Flower-heads.—Radiate-composite, borne in a flattish, loose panicle, each head about three-fourths of an inch across. Ray-florets white or pinkish, very narrow and numerous, from forty to eighty making a fringe around the yellow centre. Disk-florets are very small and very many. Involucre of many minute bracts. Receptacle flat. Pappus double, the inner a series of slender, fragile bristles, often wanting in the ray-florets; the outer a series of short, partly united, slender scales.

Travelling across country in summer, one often sees entire fields covered with a white mist of flowers. The plant that produces this snowy mist may be one of three: the Ox-Eye Daisy, the Daisy Fleabane, or the Wild Carrot. If the flower is of the Daisy type, but large with yellow centre and long white rays, it is the Ox-Eye Daisy. If it is still the Daisy type but small, with small yellow disk and many short, narrow, white or pinkish rays, it is the Fleabane. If the flower is neither of these, but a symmetric flat-topped cluster, three inches across, made up of tiny white flowers arranged in wheels, it is the Wild Carrot. In our climate it must be one of the three, there are no others.

Daisy Fleabane.
Erigeron annuus

The Daisy Fleabane when in full possession of the field rises gaunt and stiff on a simple, erect stalk, which branches at the top into a loose, long-stemmed cluster of small Aster-like flowers. In the Middle West these flowers are at their height of beauty in July, but in the uplands of New England they are beautiful and abundant in August, and often strike hands and meet the real Aster in September.

The flower-head of the Daisy Fleabane can be very easily distinguished from an Aster. The rays, white or pink, vary in number from fifty to eighty, and are so narrow that they look like fringe; the florets of the central disk bloom in circles from circumference to centre, and when all have opened the rays collapse. The Daisy Fleabane makes most of the family show in July but there may be, and probably

are, in every Fleabane community others of the genus, especially the Philadelphia Fleabane, an earlier and more beautiful form, which in June sometimes takes possession of a field on its own account. The two are very similar in general appearance; the distinction between them lies chiefly in leaves and stems.

The ugly English name is due to the popular belief that the leaves will drive away fleas, which, of course, they will not do.

DEVIL'S PAINT BRUSH. ORANGE HAWKWEED. GRIM, THE COLLIER

Hierácium aurantiácum

Named from the Greek *hierax*, a hawk, because of the ancient belief that hawks sharpened their sight by feeding upon them.

Perennial. A very destructive weed, forming close patches of thick-set leaves, and in midsummer sending up a flowering stem which bears several orange-red flower-heads. In fields and woodsides. Naturalized from Europe, and now found from New Brunswick and Ontario to New York, New Jersey, Pennsylvania, and rarely in Ohio. June–September.

Stem.—Six to ten inches high, slender, hairy, either leafless or with one or two small sessile leaves near the base.

Leaves.—Spatulate or oblong, hairy, obtuse at apex, entire or slightly toothed, narrowed at base, two to four inches long; growing in tufts.

Flower-heads. — Ligulate-composite, all ray-florets. Heads borne on short peduncles in terminal clusters, three-fourths to an inch across, orange-red rays. Bracts of involucre linear-lanceolate, hairy, sometimes glandular.

Peduncles glandular-hairy. Pappus not abundant. Hairs of involucre dark.

These flaming plants in the midst of a meadow give splendid color, but if one knows the real conditions the name of Devil's Paint Brush is quite understandable, for it expresses clearly and forcibly the farmer's point of view. This is a plant that may be admired for its beauty and should then be executed for its crimes.

Devil's Paint Brush.
Hierácium aurantiácum

The individual is a stem arising from a cluster of hairy leaves. These clusters grow so near together that they form a closely felted carpet that no other plant can penetrate and the grass is choked out; in a short time this plant will utterly destroy a meadow.

It ripens many seeds and sends them forth on the wings of the wind, but its main reliance is upon its runners and stolons by which it gathers in surrounding territory.

It seems an especially ugly weed in England, and is there known as Grim, the Collier, referring to the grimy appearance of the stalk, whose green is obscured by many dull, brownish hairs. The beauty of the plant is its flower-head; yellow centered, orange-red, abundant, lurid, flaming, it dominates its surroundings.

There are other Hawkweeds, scarcely a roadside tangle is without a few of their small, yellow heads.

ELECAMPANE, HORSEHEAL

Ìnula helènium

Inula, an ancient Latin name of obscure origin.

A coarse, stout, perennial herb, three to five feet high, bearing large, yellow flower-heads. Dwells along the roadside, but oftener in damp pastures. Naturalized from Europe. Nova Scotia to Minnesota, south to North Carolina and Missouri. July–September.

Elecampane. *Ìnula helènium*

Roots.—Large, thick, mucilaginous.

Stem.—Three to five feet high, densely hairy, rarely branched.

Leaves.—Alternate, broadly hairy, rough above, velvety beneath, somewhat toothed, acute at apex, midvein conspicuous. The larger lower leaves taper toward either end and are set on slender winged petioles; stem leaves sessile or cordate-clasping, smaller than the others.

Flower-heads.—Radiate-composite, solitary or few, terminal, stout-peduncled, two to four inches across. Involucre flattish, outer bracts leaf-like. Ray-florets many, linear-pistillate, the strap toothed. Disk-florets perfect, tubular, five-toothed. Akenes with pappus of rough bristles.

The Elecampane may be easily distinguished from the wild Sunflowers, the only plants with which it might in any way be confused, by the character of the rays of the composite flower-head. The tubular florets are set in a large, flat disk and this is surrounded

by a fringe of narrow, slightly curving, spreading rays, often fifty or more. The rays of the Sunflower heads are broad and few in number. The rays of Elecampane are many and narrow. The plant challenges attention because of its tall, stout, leafy stalk.

Most of our floral vagabonds came to us by chance but this one was invited. The plant long possessed a reputation as a medicine for horses, an especial virtue having been ascribed to its thick, mucilaginous roots, and it was originally cultivated for medicinal use. Its reputation has departed but the plant remains. It is a coarse, unattractive, worthless weed, surviving in damp, waste places because no one has had energy enough to destroy it. The name Elecampane is referred to Ala Campania because of its abundance in that ancient province of southern Italy.

MAYWEED. DOG FENNEL

Ánthemis cótula

Anthemis, the ancient Greek name of Camomile.

Annual. Naturalized from Europe. A branching, strong-scented herb with acrid juices, with small Daisy-like heads and finely dissected leaves; found in the dust of the wheel-path, in barnyards, and waste places. United States and Canada, also found in Europe, Asia, Africa, and Australia. June–November.

Stem.—One to two feet high, much branched, smooth, leafy.

Leaves.—Alternate, finely cut, possessing a strong odor.

Flower-heads.—Radiate-composite, like small Daisies, about an inch across. Ray-florets white, ten to fifteen.

Yellow disk-florets packed upon a hemispherical receptacle; as these florets mature the disk becomes cone-shaped, and chaffy. No pappus. Akenes ribbed.

Mayweed is a cosmopolite, at home all over the world, and so thoroughly has it understood the business of being a weed that its native land is a matter of doubt. A little bushy plant, growing each year from seed, it reaches the height of one to two feet, bears flowers from every branch and branchlet, lives where it must, rejoices in plenty, gets on with very little, and is possessed of a wonderful vitality that enables it to conquer the world. So far as one can see it is not of the slightest use, moreover the odor of flower and leaf is unpleasant. The alternating leaf is so finely cut and divided that it is little short of a green fringe adorning stem and branch. The flower resembles a little Daisy. The yellow disk-florets are closely packed in a central head which, as they mature, becomes cone-shaped. This is surrounded with a circle of white, grooved and notched ray-florets. When night comes, the head puts back these ray-florets against the stalk in such a way that they suggest the ears of a frightened rabbit. Why they do this is a difficult question, as apparently it leaves the disk-florets exposed to wet and cold instead of protected.

A Scandinavian name for the Mayweed, curiously enough, is Balder's Brow. Balder was the Norse god of summer, the brief summer so dear to the dwellers of the north, and naturally its god was the most beloved of all the gods of the pantheon. Sacred to him was this little Daisy—day's eye, which typified the sun. The golden centre was the eye of Balder, the white rays the light which streamed from the sun.

DAISY. OX-EYE DAISY. WHITE WEED

Chrysánthemum leucánthemum

Chrysanthemum, Greek, golden-flower.

Perennial and winter annual. Naturalized from Europe. The Daisy flowers whiten the fields, meadows, and roadsides in late June and early July. Regarded as a pernicious weed. June–October.

Root.—Tap, fringed with many rootlets.

Stem.—Erect, often tufted, one to three feet high, sparingly leaved.

Leaves.—Stem leaves partly clasping, lance-shaped or spatulate, obovate, variously cut and notched; uppermost—small, almost entire. Basal leaves oblong, obovate or spatulate, coarsely cut and toothed, narrowed into long slender petioles. The seedlings form rosettes upon the ground.

Flower-heads.—Radiate-composite, solitary, at the top of the stem, an inch and a half to two inches across. The centre is a flattened hemisphere, slightly hollowed, yellow, composed of many densely packed, brilliant yellow tubular florets, forming the disk of the head. Around this are twenty to thirty beautiful, long, rather broad, white, spreading ray-florets. They are veined and slightly grooved and finely toothed at the tip. They are pistillate, and mature seed. Receptacle is flat. Involucre is composed of many oblong, obtuse, overlapping bracts, with dry margins, and a brown line just within the margins. No pappus. It sometimes happens that the ray-florets are changed into large, tubular florets.

"Over the shoulders and slopes of the dune
I saw the white daisies go down to the sea—
A host in the sunshine, a snow drift in June,
The people God sends us to set our hearts free."

—Bliss Carman.

The Ox-Eye Daisy came to us from Europe. One of its great centres of distribution was the battle-field of Saratoga and the route of Burgoyne's army, because the horses were fed upon fodder that came from central Germany, and this weed, so tradition says, was in the hay and its seeds sprang up in the track of the army. At any rate the plant is now thoroughly established in both New England and the Middle States, and in early summer often whitens with its bloom fields and meadows.

The name Daisy is a poetic thought, the day's eye. The English folk gave this name centuries ago to *Bellis perênnis*, Chaucer's "floures white and rede." They saw in the flower a tiny copy of the sun at which it gazes. There was a golden disk and shooting out from it, in every direction, white rays.

Our Ox-Eye Daisy has inherited or assumed the common name, once the sole property of the little English flower. The blossom appeals to the artist because of its beauty and its decorative value, for like all the composites, whose rays must give their honey-call as long as there remains a tubular floret unfertilized, its life is long. Moreover the flower is used in childish divination. All children know the rhyme:

> "Rich man, poor man, beggar man, thief,
> Doctor, lawyer, merchant, chief."

Marguerite in "Faust" plucks the petals to the refrain: "He loves me, he loves me not, he loves me."

Again, the tiny yellow florets are thrown over the shoulder from the back of the hand, deciding by the number remaining any one of a dozen fancies. The

Ox-eye Daisy. *Chrysánthemum leucánthemum*
Black-eyed Susan. *Rudbéckia hírta*
Mayweed. *Ánthemis cótula*

Daisy field is a joy to every one but the farmer; to him it is a menace and a pest, to be destroyed without mercy.

The flower-head is very interesting, the twenty or more ray-florets making a frame for the golden-yellow disk. Each ray is rather broad, veined, and toothed at tip, each is fertile and matures seed. The central disk is made up of many circles of tubular florets, the outer circles blooming while the inner remain buds. In each disk-floret the five anthers make a yellow tube full of pollen which is pushed out by the style which rises through it. After the pollen is scattered the style opens its two arms ready to receive any pollen that comes its way.

BLACK-EYED SUSAN. YELLOW DAISY

Rudbéckia hírta

Rudbeckia, in honor of Claus Rudbeck, a Swedish botanist.

Both annual and biennial. Native to Colorado and Central States. A Composite with beautiful flower-heads of orange-yellow rays and a dark, conical centre. Stems grow in tufts, and several flower-heads are in bloom at the same time. June–September.

Stems.—One to three feet high, strong, erect, rough, and hairy, sparingly branched, growing in tufts.

Leaves.—Alternate, oblong to lanceolate, thick, rough, sparingly serrate or entire, acute. Lower leaves petioled; upper leaves sessile.

Flower-head.—Radiate-composite, conspicuous. Ray-florets, ten to twenty, orange-yellow, notched at the tips, with two faint parallel veins running their length, pistil-

late, fertile. Disk-florets densely packed on a conical torus pinkish at base, but purple-brown at tips. Anthers and stigmas are also brown, but the pollen is brilliant orange and abundant. Bracts of involucre are long, narrow, and hairy. No pappus.

Pollinated by flies, bees, and butterflies.

Black-Eyed Susan is oftener found growing in clumps over the fence in the meadow than by the roadside; the superb color of its flower-heads calls from afar. In blossoming the ray-florets spread out first, then the disk-florets around the base of the floral cone open and push out their yellow pollen through and over the brown tube of the anthers, and day by day the blossoming circle creeps upward until it reaches the top, then when the last honey-call to bee and butterfly has been given, the rays, their work completed, weaken and collapse and the end has come.

There is no pappus and consequently no balloon attachment, the seeds must scatter as they can. They are often found in western hay shipped east, for the plant is native to western sunny fields and has wandered eastward by way of commerce.

Later in the season the Tall Rudbeckia, *Rudbêckia laciniàta*, appears. It is no lover of hot, sunny fields, as is Black-Eyed Susan, but dwells in moist thickets such as border swamps and streams. This is a smooth, branching plant, varying from three to ten feet high, its great lower leaves on long petioles have from three to seven, variously lobed and toothed, divisions, while the stem leaves are irregularly three to five-parted. The many showy flower-heads measure from two to four inches across, have eight to ten large, bright yellow ray-florets, drooping a little around a dull

greenish yellow, conical disk that gradually lengthens as the seeds mature. It blooms from July to September, and ranges from Canada to the Gulf of Mexico.

YARROW, MILFOIL

Achillèa millefòlium

So named because its virtues are said to have been discerned by Achilles.

A perennial, gray-green herb, with brownish white flowers in flat-topped clusters. At its best in July, when its finely dissected, fern-like leaves and stiffening stalks border every roadside. Naturalized from Europe.

Rootstock.—Horizontal, sending out runners.

Stem.—Erect, one to two feet high, leafy, sometimes hairy, branching near the summit at the flowering time.

Leaves.—Long and narrow, deeply cut into slender parts, each of which is again cut into very fine fringe. Curled and feathery, clasping the stalk at frequent intervals. Midrib hairy underneath.

Flower-heads.—Radiate-composite, with four to six small, oblong, three-toothed, usually white ray-florets which surround the tiny disk of perfect, yellowish or brownish disk-florets. Involucre is a small, pale-green cup, made up of tiny bracts. These heads are borne in many small, compact groups which are gathered into one or more large, flat-topped, stiff-branched, terminal clusters. The yellow centre which looks like stamens is really made up of several white, tubular corollas whose mouths are filled with brilliant yellow stamens.

Pollinated by many insects. Nectar-bearing.

Yarrow appears by the roadside in two forms: one, the seedling as a bunch of bright green, marvellously

dissected leaves in a rosette so full and flowing as at once to attract the eye.

The other is the blossoming plant which begins to open its clusters in June. These are white with a dash of brown which spreads as the florets mature and the seeds begin to ripen—when at last the life-drama is ended, after the last floret has opened and closed, the plant stands a group of brown stalks crowned by a brown cluster of seed-vessels.

Yarrow. *Achillèa millefòlium*

When these gray-green stems begin to assert themselves in June, they are accentuated by tight clusters of dull gray-green buds that tip the branches. A few days later the gray, massed buds show a suggestion of white and soon open. What looks in the open cluster like a single corolla with five petals is really a small flower-head with five white ray-florets and a centre of tubular white florets whose mouths are fitted with yellow stamens. There is no grace and little attractiveness about the plant, but it escorts the traveller along the roadsides of three continents.

Pungent juices lie within these gray-green tissues and it must be because of these that this commonest of common weeds confronts us, not only at the wayssides of the world, but in the mythology, the folk-

lore, the *materia medica*, and the literature of many peoples.

One of the stories told of the plant's medicinal virtues is that an ointment made from it will heal all wounds. This is said still to be used in Scotland and Iceland. In mythology it was the centaur Chiron who told Achilles of this wonderful ointment, that he might heal his soldiers wounded at Troy. Therefore, the plant is *Achillea* to the botanist. As a love-charm it still survives among the peasants of Great Britain in that form of domestic divination of which both Scotch and English folk-lore is so full. On midsummer eve, a bunch of Yarrow under the pillow is supposed to bring to the sleeper in dreams the future husband or wife. An old rhyme showing this belief is still extant:

"Thou pretty herb of Venus tree
Thy true name it is Yarrow
Now, who my dearest friend shall be
Pray, tell thou me tomorrow."

The interesting question arises: How has the Yarrow succeeded in accomplishing so much? First of all, it is a composite, second, it is a perennial, moreover, it increases both by runners and by seeds; its flowering season is long; brimming with nectar, it attracts many insects; and what is, perhaps, most important of all its magnificent vitality enables it to live and prosper where others perish.

YELLOW THISTLE

Cârduus spinosissimus

A biennial or perennial Thistle, of stout robust aspect, very leafy and spiny, sometimes branched at the summit and bearing a broad head, yellow in color. In moist, sometimes in dry sandy soil, especially along the New England coast. Maine to Pennsylvania and southward. June–August.

Root.—Large, thick, solid.

Stem.—Leafy, stout, two to three feet high, somewhat woolly when young, but becoming smooth.

Leaves.—Lanceolate or oblong in outline, sessile and clasping, or the basal ones short-petioled and somewhat spatulate, cut into triangular, or broad, spiny-margined, prickle-tipped lobes which may themselves be toothed or entire. Autumn tufts of leaves large and spreading.

Flower-heads.—Discoid-composite, that is, entirely destitute of rays; an inch and a half to three inches across. Florets all perfect and fertile, usually yellow. Involucre of spine-tipped bracts, imbricated in many series, and reinforced by the upper spiny leaves which are lanceolate. Corolla tube is slender, yellowish, the border deeply five-cleft. The five anthers unite into a tube. Style long, slender, two-lobed, giving much of the yellow color to the flower. Pappus cream, long, silky, abundant.

Pollinated by bees and butterflies. Nectar-bearing. Stamens mature before stigmas.

The Yellow Thistle is typical of a Thistle group of which the Fragrant or Pasture Thistle of New England and the Middle States is a well-known example. Its personal characteristics are its color, which is a marked variation from the typical purple of our

common Thistles, and the curious way in which the upper leaves reinforce the involucre, winding themselves about it and presenting a clawed surface to the outer world. It dwells of choice in wet soils, is often the companion of the Iris along our eastern shore lands. As a Thistle it is splendid—robust, virile, well armed,

Yellow Thistle. *Cárduus spinosissimus*

and crowned with a magnificent head of dusky yellow in its depths, relieved by the lighter yellow fringe of long slender styles. It is a royal Thistle.

Fragrant or Pasture Thistle, *Cárduus odorátus*, blooms from July to September and ranges from Maine to Pennsylvania. Large-headed, stout-stemmed, a brother of the Yellow, it stands in pasture and roadside, offering to bee and butterfly, and children as well, innumerable florets brimming with

nectar. In color it varies from the thistle-purple to pale lilac and sometimes nearly white; in summer it seems to live and have its being to the music of the bumblebees' buzz. The plant is biennial, and its autumn rosette of leaves large and spreading.

COMMON THISTLE. ROADSIDE THISTLE. BULL THISTLE

Cárduus lanceolàtus. Circium lanceolàtum

Biennial. Naturalized from Europe. This is the Thistle that wanders along every roadside of the country from Newfoundland to Georgia and west to Minnesota and Nebraska. July–November.

Root.—Single deep tap-root.

Stems.—Three to five feet high, several arising from a rosette of long, prickly, spiny leaves, erect, branching, strong, woody, closely hugged by prickly leaf stems.

Leaves.—Alternate, long, lance-shaped, deeply cleft, sharp-pointed, covered with spines and prickles, rough, bristly, woolly beneath when young. Stem leaves decurrent on the stem. First-year leaves form a rosette upon the ground.

Flower-head.—Discoid-composite, that is, all florets tubular; an inch and a half to two inches across, thistle-purple, mostly solitary at the ends of stems and branches. Involucre of lanceolate bracts, all tipped with needle-like prickles. Pappus white, long, plumy. Akenes light-colored, oblong, slightly curved and flattened. Fragrant.

Pollinated by bees and butterflies. Nectar-bearing. Stamens mature before the stigma.

The Roadside Thistle escorts our steps from the Atlantic coast to the Mississippi River, a plant of beauty and of dignity, but of no economic value.

All the Thistles are armed cap-a-pie and one wonders what enemy is so dreaded that such preparations must be made against him. The central stem, the leaves, the very involucres of the flower-heads bristle at every point. The leaves, woolly beneath, rough above, spiny on the edges, are cleft and cut and ruffled, simply, it seems, to make room for more spines, more bristles, and more prickles. It is evident that the enemy against whom the treasure-house is guarded is an enemy that has legs but no wings, an enemy that will eat the nectar, but cannot distribute the pollen. The chief of these is the ant, the omnipresent ant, and bristles are great discouragers of ant industry.

Roadside Thistle. *Cárduus lanceolàtus*

The beautiful flower-heads are a lovely rose-purple, the florets protected by a prickly involucre and a spiny peduncle. They are borne at the summit of the stem and from the axils of the upper leaves. Highest heads open first, the outer florets mature first. Each ray-floret parts into five fringe-like lobes at the

top, and at the bottom is a tube brimming with nectar, for the Roadside Thistle, like all the Thistles, keeps open house and many guests frequent its table. There is but one condition—they must come on wings.

Each Thistle-head ripens seeds by the hundreds, and these seeds are especially attractive to the goldfinches who line their nests with these silky hairs and may often be seen tearing the ripened heads apart.

What we call the seed is really an oblong, pointed, little shell called akene, that contains just one seed and has attached to it a very beautiful collar of silky hairs. When the seed is ripe and ready to depart on its long journey, the hair-like threads spread, the filmy plumelets open out, and a fairy parachute is formed, carrying the seed which, hanging below, fits its sail to the breeze and seeks its fortune as the fates decree.

The first season that the seed germinates, the plant develops only a rosette of leaves. A rosette of leaves is part of the tactics of a successful weed. The next year it sends up stems, blooms, matures seeds, and dies. It is a biennial and its work is done.

When it becomes the fate of the Thistle to be eaten, but one creature seems competent to the task. The following account is interesting:

"Few experiences of frontier life are more amusing than to watch a donkey's attack upon a bull thistle. He walks about it, seeking for a favorable opening, projects his lip gingerly against its spines and jerks back as he feels it prick. He surveys it pensively for a moment or two, and then slowly raises his foot and strikes it, pausing to note the effect of his blow. He then perhaps strikes it from the other side and watches again. The blows become rapid, and at length the stem is broken down and thoroughly trampled, after which it is eaten to the last shred."

"The thistle is an idealist among plants. Its dreams would be worth recording. When its season of bloom is past, its leaf lances rusted and broken—when seemingly its fortunes are at the lowest ebb—then look out for the shining fleets of its seeds. Through all the fine autumn weather these cruise about, above the fields, over the village streets, even entering the houses through doors and windows. On goes the winged hope of the thistle, flashing white in the sunshine, but dark in the shadow."

CANADA THISTLE. CREEPING THISTLE

Cárduus arvénsis

A perennial, diœcious plant. The worst pest of all the Thistles because of its creeping roots which make it difficult to eradicate. Found in cultivated fields, on roadsides, and in pastures. Naturalized from Europe. June–September.

Rootstock.—Deep-growing, horizontal, and creeping, and so forming patches and colonies.

Stem.—Woody, slender, branched above, one to three feet high.

Leaves.—Alternate, sessile and slightly clasping, oblong-lanceolate, deeply cut into very prickly lobed or dentate segments; basal leaves sometimes petioled.

Flower-heads.—Discoid-composite, that is, with no ray-florets. Many borne in loose, petioled clusters at the tips of the branches, purple-pink, rarely white. Flower-heads either staminate or pistillate. Pistillate heads oblong, bell-shaped, constricted at the neck; styles pink-purple and projecting, conspicuous, giving a fluffy look to the flower-head. Bracts of the involucre pressed close and each tipped with a tiny hook. Staminate heads globose, corollas projecting. As the seeds mature the pappus becomes long, silvery, conspicuous. Many heads mature pappus, but no fertile seeds.

Fertilized by many insects. Nectar-bearing.

"Jubal sang of the wrath of God,
And the curse of thistle and thorn;
But Tubal got him a pointed rod
And scrabbled the earth for corn."

—KIPLING.

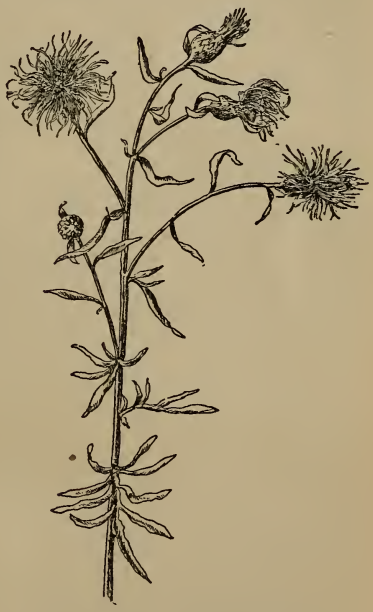
Canada Thistle. *Cárduus arvênsis*

Of all Thistles the one most difficult to eradicate is that known as Canada Thistle, though Canada is not its native land. Many ways of disposing of the pest are recommended, but after all Tubal hit upon the correct one, cultivate the ground for something else and keep at it; the plant should never be allowed to bloom, it should never have any rest, whenever it appears it should be cut. The reason for its successful defiance of man lies in two characteristics: First, the plant possesses a horizontal creeping rootstock endowed with wonderful vitality and capable of sending forth rootlets at every node. So that when a well-established plant is disturbed by the plough and left disregarded, all the farmer has done is simply to prepare the ground for several individuals instead of one, each of which proceeds to grow with youthful vigor. He has multiplied his pest.

Then, too, it belongs to that earth-controlling order

the *Compositæ*. Moreover, every one of its florets is filled with nectar and invites the entire winged world,—beetles, bees, flies, butterflies,—all welcome and all fed, so that by their eagerness, every stigma gets its share of pollen. The mature seeds borne on silvery wings ride the wind in pursuit of a home.

There is, however, one point in favor of the farmer, the plant is dicœcious and it often happens that many florets fail of fertilization, so that the amount of seed produced is often more apparent than real.



Purple Star-Thistle. *Centaurèa calcitrapa*

PURPLE STAR-THISTLE

Centaurèa calcítrapa

Annual. Naturalized from Europe. In waste places, and in ballast. A bushy herb with rough, rigid stems and bearing rose-purple composite flowers. Massachusetts to New York, New Jersey, and Virginia. June–October.

Stems.—Rough, rigid, branching.

Leaves.—Alternate, deeply cut into oblong, lanceolate, or linear segments, often irregular; the lower and basal

short-petioled; the upper sessile and slightly clasping. Petioles often narrowly winged.

Flower-heads.—Discoid-composite, that is, all tubular, rose-purple, about an inch across. The outer row of florets are sterile and the margins deeply cut into five long, narrow, twisting segments; the inner rows are fertile, slightly swollen, and the borders with shorter lobes. Involucre ovoid, hard; bracts imbricate, each one tipped with a minute, reddish spine, fringed with tiny, white spinelets. There is no pappus.

The Star-Thistle probably came by way of ballast and so far has not strayed very far inland. The heads possess a charm at first difficult to explain, but probably due to the fluffy and twisted segments of the outer florets.

PURPLE EUPATORIUM. TALL EUPATORIUM. JOE-PYE WEED

Eupatòrium purpùreum

Eupatorium, of a noble father; said to be named for Mithridates.

Perennial. Native. A tall, vigorous, leafy plant, standing three to ten feet high, conspicuous in low wet places, along open streams, and in swampy fields, bearing large compound clusters of pale, dull pink flowers. New Brunswick to Manitoba, south to Florida and Texas. August, September.

Roots.—Woody, fibrous.

Stems.—Three to ten feet high, stout, green or purplish, leafy, usually branching toward the top.

Leaves.—Three to six, though usually four in a whorl, petioled, ovate-lanceolate, serrate, acute or acuminate, very veiny, veins depressed above, conspicuous beneath.

Purple Eupatorium at Home. *Eupatòrium purpùreum*

Flower-heads.—Discoid-composite, of tubular florets only; borne in large, loose, compound clusters, both terminal and axillary. Involucre of two or three series of magenta-pink bracts. Florets tubular, slender, dull magenta-pink. Stamen tube darker pink; protruding styles also pink. Pappus abundant, brownish.

Pollinated by butterflies chiefly. Nectar-bearing. Stamens mature before the stigma.

Towering above the surrounding vegetation of low-lying meadows and pastures, forming in swampy places large colonies, following the shore of pond or slow-moving stream, this sturdy and vigorous plant spreads to the midsummer sun clusters of soft bloom that glow pink in the sunshine, but dull in the shadow, yet because of their size and number are ever conspicuous. The flower clusters are dome-shaped or elongated, both terminal and axillary. The soft, fringy fluff of the cluster is due to the protruding style branches, of the same color as the floret. The flower color is *sui generis*, once seen it is ever after recognized, but its correct naming is difficult. It dominates every part of the flower: involucre, corolla, stamens, and styles. The tall central stem bears its long pointed leaves usually in whorls of four, branches toward the summit, and is often stained with purple. In swampy lands where the plant can develop freely, the root sends up a group of three to six of these strong stems. Associated with this upstanding, sturdy creature are others, growing in the lowlands, blooming about the same time and comparing favorably with it in size and dignity, the Sunflower, the Great Rudbeckia, and the Iron-Weed, each the embodiment of strength and of vigor.

BONESET THOROUGHWORT

Eupatòrium perfoliàtum

Perennial. Native. In low, moist, or fairly wet places, along streams, in the tangles of roadside thickets, bearing in late summer clusters of dull white composite flowers. From New Brunswick to Manitoba, south to Florida and Texas. Leaves and flowers, properly gathered and dried, still have a value in the drug market. July–September.

Stem.—Large, hairy, two to four feet high, branching at the top.

Leaves.—Opposite, broad-lanceolate, united at the base around the stem and tapering to a slender point, rounded-serrate, very veiny and wrinkled, downy beneath, five to eight inches long; color a gray-green.

Flower-heads.—Discoid-composite, each head of ten to twenty tubular florets, each little group containing five to ten heads. The large cluster more or less flat-topped, greenish white. Involucre long, bell-shaped, its bracts lanceolate, downy, in two or three series, the outer shorter. The tubular florets white; anthers dark purple, and protruding styles white. Pappus abundant.

In Mrs. Stowe's "Old Town Folks," Miss Saphronia divides all wild plants into two classes: "Blows that are good to dry and blows that are not." Boneset was one of the blows good to dry. In fact, the dried flowering stems of Boneset long made part of the early domestic *materia medica* of New England and the Middle States. It is said to have been a remedy whose value was learned from the Indians.

The plant is readily distinguished by its round, hairy stalk, but especially by its opposite leaves whose bases so unite and grow together that they appear like one long continuous leaf with the stalk passing

Boneset. *Eupatòrium perfoliàtum*

through its centre. They are crenate-dentate at margin, very veiny, the veins depressed above and very conspicuous beneath, the entire leaf somewhat wrinkled.

The flower clusters are a dulled greenish white and covered with a white fringe of style branches, which gives a fluffy appearance to the whole. The tubular florets are white, of a greenish cast, the stamen tubes dark purple, the protruding styles pure white, and the enveloping involucre green, the outcome a dull greenish white.

Iron-Weed. *Vernònia noveboracénsis*

IRON-WEED. FLAT TOP

Vernònia noveboracénsis

Vernonia, named after William Vernon, an English botanist.

Perennial. Native. A tall plant found in moist soil and low pastures, bearing flat-topped clusters of intense purple flowers. New England to Minnesota and Missouri, south to Georgia and Mississippi. July–September.

Stem.—Three to nine feet high, branching.

Leaves.—Alternate, oblong or lanceolate, serrate, acute or acuminate.

Flower-heads.—Discoid-composite, resembling small Thistle-heads, borne on short, branched peduncles and forming broad, flat clusters. Bracts of involucre brownish purple, tipped with awl-shaped bristles. Akenes ribbed. Pappus of two series, the outer of small scales, the inner of hair-like bristles.

Pollinated by bees and butterflies. Nectar-bearing.

The color of the Iron-Weed blossom in intensity surpasses that of any other flower of the field except, perhaps, the Cardinal Flower. The plant is often found in company with Joe-Pye Weed, both seeking moist lowlands, both dominating the lower plants about them. It lacks the grace of either the Eupatoriums or the Sunflowers, but its color is marvellous.

TANSY. BITTER BUTTONS

Tanacètum vulgàre

Tanacetum, referred to Greek *athanasia*, immortality.

Perennial. Naturalized from Europe. Grows in clumps, having escaped from old gardens; now follows the highways and in New England is often in possession of entire fields in company with the Goldenrods. Nova Scotia to Minnesota, south to North Carolina. July–September.

Stems.—Two to four feet high, densely leafy; leaves decurrent on the stem.

Leaves.—Alternate, dark green, deeply and pinnately cleft into narrow, toothed divisions; lower segments of the leaf often smaller than the others. Basal leaves often a foot long. Strong scented, bitter and aromatic.

Flower-heads.—Discoid-composite, brilliant yellow, made up of small yellow disks of tubular florets only,

borne in flat-topped clusters. Imperfect ray-florets rarely appear. All florets fertile. Involucre of dry, imbricated bracts. Pappus a short crown, or wanting.

Tansy once had an astonishing reputation for its medicinal virtues, due, doubtless, to its bitter and aromatic juices. This reputation has largely departed, but so great was it at one time that the plant was early brought to this country and became a conspicuous inmate of old-time gardens. Along the New England roads, a bed of Tansy alone in the open, like a neglected Lilac-bush or one lone Lombardy Poplar, frequently is all that is left to mark the site of a home and a garden long since vanished.

Tansy. *Tanacètum vulgàre*

The blossoms make flat-topped clusters of yellow buttons surmounting a mass of close-growing stems, whose leaves are cut and cut, and cut again, until they seem simply an aggregation of green points. It is possible the plant may come to its own for landscape effects, as it will with little care give great masses of golden bloom.

PEARLY EVERLASTING

Anáphalis margaritácea

Anaphalis, a Greek name of some similar plant.

A native perennial herb, noticeable for its white stems and flowers, common in dry pastures, borders of woodlands, and recent clearings. Newfoundland to Alaska, southward to North Carolina, reported from California. America, Europe, Asia. July–September.

Stem.—Erect, white, with densely matted, woolly hairs, one to three feet high, corymbosely branched at the summit.

Leaves.—Alternate, upper leaves small, narrow, linear-lanceolate, sessile, woolly beneath; lower leaves broader, edges rolled backward, green downy above and woolly beneath, midrib conspicuous; lowest leaves often spatulate, obtuse.

Flower-heads.—Discoid-composite, all the florets tubular, dicœcious, white, borne in small terminal or axillary, flat clusters. Involucre bell-shaped; bracts white, imbricated in several rows, those of the outer row short. Receptacle convex. In staminate flower-heads the corolla is slender, style undivided, and pappus of slender bristles, not thickened at the summit, anthers tailed at base. In pistillate flower-heads, the tubular corolla is five-toothed, style two-cleft, and pappus abundant; akenes oblong.

The Pearly Everlasting is one of the most exquisite creatures of the roadside. In early August, along upland roads and in mountain pastures, it appears as a group of white, leafy stems rising from a bed of white leaves, each stem bearing at its summit a cluster of buds of pearly shape and lustre. The color effect of the plant is white, an examination shows that this

is the result of many white, cottony hairs which cover stem and leaves, giving a felted surface to both. The leaves are lanceolate in shape, the midrib conspicuously white. They narrow to a clasping base and hug the stem, greenish gray above and white beneath.

The little, white bud-balls are made of many dry, overlapping scales, and as summer wanes these little balls open with the result of many globose flower-heads, borne in small groups that are gathered into terminal, slightly rounded or flat-topped clusters. After the heads open one sees that the pearly scales enclose and protect a little tuft of fuzzy, tubular florets. The florets of one plant are all alike, but those of a plant near by may be quite different, for the species is dicœcious, that is, the staminate and pistillate flowers are borne on separate and different plants. In time the centres become brownish and finally, after one group has lost its pollen and the other has matured its seeds, the plants stand waving their white plumes to autumn, well on her way. This Everlasting is abundant from August to October. The white felt which covers leaves and stems renders it immune from grazing animals. Growing as it does in poor soil and dry pastures, it has so little juice that it retains its form when dry, so that the wanderer coming cityward from summer journeyings will see its white flag over the

Pearly Everlasting.
Anáphalis margaritácea

hills and far away as he takes his course toward work and care—a memory of whiteness and purity.

SWEET BALSAM. FRAGRANT EVERLASTING

Gnaphàlium obtusifòlium

Annual or winter annual. A white, fragrant herb, found especially in old fields, pastures, and open woods. Nova Scotia to Ontario and Manitoba, southward to the Gulf. July–September.

Stem.—Softly woolly because of many matted white hairs, one to three feet high, usually branched at the top.

Leaves.—Alternate, narrow, oblong, or linear-lanceolate, sessile, acute or acutish; the lower often obtuse at apex, tapering toward the base, white woolly beneath, smooth and commonly green above.

Flower-heads.—Discoid-composite, oblong, few flowered, all florets tubular; pistillate florets in outer rows, perfect florets in the centre; borne in loose flattish clusters. Receptacle flat. Bracts of involucre white, papery, shining, in many rows, closely appressed, not opening until the seeds mature, often slightly tinged with brown at base; the lower ones slightly woolly at base. Seeds smooth and small; pappus slightly tawny.

This is the fragrant Annual Everlasting with oval heads that do not expand until the seed is mature. It is a plant of the open, thrives in old fields and dry woods. The small, white, urn-shaped heads are borne in little groups of three to six, which are gathered into a loose, bushy, flattish cluster at the summit of the stem. The color effect of the entire plant is white. In the centre of the white cups is a yellow spot made up of tiny yellowish florets, whose color is due to the

stamens within. The little florets are densely and safely packed in abundant pappus. The fragrance of the plant is one of the most persistent, pervading, and delightful of outdoor odors. One often sees a field white with these fragrant blossoms.

Oliver Wendell Holmes in "Autocrat of the Breakfast Table," writes of the plant:

"Perhaps the herb Everlasting, the fragrant immortelle of our autumn fields has the most suggestive odor to me of all those that set me dreaming. I can hardly describe the strange thoughts and emotions that come to me as I inhale the aroma of its pale, dry, rustling flowers. A something it has of sepulchral spicery, as if it had been brought from the core of some great pyramid, where it had lain on the breast of a mummied Pharaoh. Something, too, of immortality in the sad, faint sweetness lingering so long in its lifeless petals. Yet this does not tell me why it fills my eyes with tears and carries me in blissful thought to the banks of Asphodel that border the River of Life."

Fragrant Everlasting.
Gnaphàlium obtusifòlium

Clammy Everlasting. *Gnaphàlium decúrrens* is also fragrant, and may very easily, at first sight, be mistaken for its brother, but taking it in hand its white woolly stem is found to be glandular and slightly sticky.

Leaves acute, a little broader than those of the Fragrant Everlasting, white woolly beneath and sessile, with a base that runs down the stem. Heads a little

shorter and thicker, closely clustered. The scales cream-white to pale brownish yellow.

COMMON BURDOCK

Arctium minus. *Lappa officinalis*

Arctium, Greek, *arctus*, a bear, from the shaggy involucre.

A coarse biennial weed, with large leaves and many branches, bearing small purplish flowers in globular heads about the size of a marble. Everywhere; varying into many forms. Naturalized from Europe. July–November.

Root.—Long, deep, tap-root.

Stem.—Two to five feet high, leafy and branching.

Leaves.—Alternate, large, broadly ovate, heart-shaped at base, entire or repand, acute at apex.

Flower-heads.—Hemispherical, in racemose clusters at the ends of the branches. Florets tubular, purple or white; bracts rigid, lanceolate, tipped with hooked bristles.

A young Burdock is a plant that commands either respect or hatred, depending upon one's point of view. A promising seedling sends up leaves that are long and broad and thick, borne on stout petioles which bear them out from the central stem in every direction, so that they cover up and choke out all lesser plants near them. They are born monopolists, they ruthlessly destroy all competitors. They clear their field at the very beginning, so that no other plants may enjoy the soil near their own roots.

When the Burdock blooms it breaks out into great

Common Burdock. *Arctium minus*

masses of green globes, about the size of marbles, speckled and spotted with purplish points, rarely white, and each point is an individual flower with purple anthers and white pollen. Beneath each floret is a spiny, hooked bract which protects it. Country children play with these little balls, making them into baskets and furniture, regardless of their unpleasant odor.

The Burdock scores its great success in the late autumn, actually becoming more powerful dead than alive. We may as well remain at attention for a while and see what really happens. The plant dies when the blooming season is over and finally becomes an unpleasant, brown group of gaunt, stiff stalks loaded with a mass of brown, spherical burrs, with little hooks on every side that lay hold of every dog, sheep, cow, or human being that comes within reach. We find our clothes laden, our collie comes in after an excursion beseeching for help, the cows' tails are loaded with burrs, and the sheep are helpless. Moreover these burrs will not let go, forcibly removed from one place, they seize upon another, and the outcome is that man, dog, cow, and sheep are busily engaged in distributing, altogether against their will, the seeds of a plant they detest. The leaves are bitter and so avoided by grazing animals. The plant is best eradicated by persistent cutting—it should never be permitted to bloom, much less to go to seed, and in time it becomes discouraged. Professor Bailey says that the plant is cultivated in Japan for its root and is there known as Gobo.

GOLDENROD

Solidàgo

Solidago from *solidare*, to join, or make whole, in allusion to its reputed healing qualities.

Perennial, native, erect herbs, bearing a wealth of golden-yellow flowers. August–October.

Stems.—Erect, sometimes woody at base, simple or slightly branched.

Leaves.—Alternate, simple, entire or serrate.

Flower-heads.—Radiate-composite, yellow, in terminal or axillary clusters. Ray-florets pistillate. Disk-florets, mostly perfect, tubular, five-lobed. Involucre of appressed bracts. Receptacle small, not chaffy. Pappus of many hair-like bristles. Akene, many-ribbed.

The Goldenrods comprise a group of flowering plants that, in early autumn, fling their magnificent beauty of cloth of gold over the landscape from Maine to Texas.

The flowers are crowded in small radiate heads, which are surrounded by an involucre made up of a few more or less appressed scales. These heads are clustered in many ways, sometimes in the axils of the leaves, sometimes they make a panicle of little racemes, sometimes a flat, irregular corymb. As the flower clusters fade they become hoary, and the seeds, tipped with fine, feathery hairs, are borne hither and yon by the wind; and in winter often become the main reliance of the birds.

Most of the Goldenrods are September bloomers, but a few are earlier. For example, *Solidàgo juncea*, Early Goldenrod, in northern Ohio begins to bloom in June. Its season runs from June to October.

The flowers of *Solidàgo sempervìrens*, Sea-side Goldenrod, appear in August on salt marshes and sea beaches.

Solidàgo nemoralis, Field Goldenrod, also blooms in sandy fields and dry hilltops during July and continues until November.

Although many species of Goldenrod under favorable conditions will begin to bloom in August, nevertheless it is the September fields and roadsides that they glorify by their abundance and their beauty.

SUNFLOWER

Heliánthus

Helianthus, flower of the sun.

Erect, annual or perennial, mostly branched herbs with opposite or alternate.

Flower-heads.—Radiate-composite, yellow. Ray-florets spreading, mostly entire. Disk-florets perfect, fertile; corolla tubular, five-lobed. Receptacle chaffy. Involucre of imbricated bracts in several rows. Akenes oblong, compressed, or angled. Pappus is of scales or awns.

Like the Goldenrods, the Sunflowers are at their best in September, though individual species begin to bloom in August and a few in July, but even then their blooming period is extended.

The earliest Sunflower by the roadside is usually *Heliánthus divaricàtus*, the Woodland Sunflower. Its slender stem, three to five feet high, topped with two or three beautiful golden heads, often looks out from the woodland tangle in early August. It may be known by its opposite, three-nerved leaves; its rays

vary in number from eight to fifteen. *Helianthus decapetalus*, Wild Sunflower, is frequently a neighbor, with alternate ovate leaves, bearing more heads than *divaricatus*, but these having about the same number of rays; its specific name ten-petaled is misleading.

ASTER

Aster

The three genera which make up the bulk of our autumn flowers are happily named: Goldenrod and Sunflower are fitly companioned by Aster, the Star.

As a group, few Asters frankly and freely bloom in August, now and then an individual species under favoring conditions comes into flower, as does the White Wood Aster, *Aster divaricatus*, and one may find here and there an open star amid the buds of many species, notably *Aster puniceus*, the Early Purple-stemmed Aster, and the New England Aster, *Novæ Angliæ*.

But the Aster as unmistakably as the Fringed Gentian and the Witch-Hazel belongs to the golden days of autumn.

GLOSSARY OF BOTANICAL TERMS

ACUMINATE.—Tapering to a sharp point.

AKENE.—A dry, one-seeded fruit, with the wall of the seed-vessel fitting tight around the seed.

ALTERNATE.—Not opposite each other.

ANNUAL.—Of only one year's duration. Winter annual is a plant from autumn-sown seed which blooms the following spring, and then dies.

ANTHER.—The part of the stamen that bears pollen.

APETALOUS.—Having no petals.

AWN.—A bristle-shaped appendage.

AXIL.—The angle formed by a leaf with the stem.

AXILLARY.—Situated in an axil.

BIENNIAL.—Of two years' duration.

BLADE.—The expanded portion of the leaf, the stem part is the petiole.

BRACT.—A small, modified leaf.

CALYX.—The outer leaves of a flower, usually green.

CAPITATE.—Shaped like a head.

CAPSULE.—A dry fruit which opens to allow the seeds to come out.

CARPEL.—A simple pistil, or one member of a compound pistil.

CILIATE.—Marginally fringed with hairs.

CLEISTOGAMOUS.—Fertilized in the bud, without the opening of the flower.

COMPOUND.—Composed of two or more similar parts united into one whole.

COMPOUND LEAF.—One divided into separate leaflets.

CORDATE.—Heart-shaped with point upward.

COROLLA.—The second whorl of floral organs.

CORYMB.—A flat-topped, open flower cluster.

CORYMBOSE.—Corymb-like.

CRENATE.—With rounded teeth.

CRUCIFER.—Name given to the flowers of the Mustard Family.

DENTATE.—With teeth directed outward.

DIŒCIOUS.—Bearing staminate flowers on one plant, and pistillate flowers on another of the same species.

DISK.—In Compositæ the tubular flowers of the centre as distinct from the ray-flowers.

EXTRORSE.—Facing outward.

FERTILE.—Capable of producing fruit.

FILAMENT.—That part of stamen that supports the anther.

FOLLICLE.—A fruit consisting of a single carpel and opening along the inner line.

FRUIT.—The seed-bearing product of the plant.

GLABROUS.—Smooth.

INTRORSE.—Facing inward.

INVOLUCRE.—A circle of bracts surrounding a flower or a flower cluster.

KEEL.—A ridge, like the keel of a boat; the two united petals of a papilionaceous flower.

LANCEOLATE.—Shaped like a lance-head—broadest toward the base, and narrowed to the apex.

MONŒCIOUS.—With stamens and pistils in separate flowers on the same plant.

NERVE.—A slender rib of a leaf—not branching.

NODE.—The place on a stem which commonly bears a leaf or a whorl of flowers.

PANICLE.—A loose, irregularly compound flower cluster.

PAPILIONACEOUS.—Bearing pea-like flowers.

PERFECT.—A flower having both pistil and stamens.

PERIANTH.—The floral envelope, consisting of calyx and corolla when present, whatever their form.

PETAL.—A division of the corolla.

PETIOLE.—The footstalk or stem of a leaf.

PISTIL.—The seed-bearing organ of the flower, consisting of ovary, stigma, and style when present.

POD.—Any dry fruit that opens.

RACEME.—A group of flowers upon a common lengthened axis.

SEED.—The ripened ovule.

SEPAL.—A division of the calyx.

STIGMA.—That part of the pistil through which fertilization by the pollen is effected.

STYLE.—The slender portion of the pistil connecting the stigma and the ovary.

UMBEL.—A flower cluster in which several peduncles or pedicels spring from the same point.

WHORL.—An arrangement of leaves or flowers in a circle round the stem.

WING.—Any thin expansion bordering or surrounding an organ.

WOOLLY.—Clothed with long or matted hairs.

COLOR LIST

It should be understood that these lists are simply a guide, giving in a general way the prevailing color of a flower.

WHITE

American Burnet.
American Lotus.
Arrow-Head.
Bladder Campion.
Boneset.
Cimcifuga.
Clematis.
Cow Parsnip.
Dalibarda.
Datura.
Dogbane.
Eel-Grass.
Indian Hemp.
Lizard's-Tail.
Mayweed.
Moth Mullein.
Ox-Eye Daisy.
Partridge Berry.
Pearly Everlasting.
Poison Hemlock.
Pokeweed.
Sweet Balsam.
Sweet Clover.
Tall Meadow Rue.
Turtle-head.
White Campion.
White Clover.
White Vervain.
Wild Cucumber.
Wintergreen.
Yarrow.
Penstemon

ORANGE OR YELLOW

Black-Eyed Susan.
Butter-and-Eggs.
Butterfly Weed.
Devil's Paint Brush.
Elecampane.
Fall Dandelion.
Goldenrod.
Moth Mullein.
Mullein.
Partridge Pea.
Prickly Lettuce.
Sow-Thistles.
Sunflower.
Tall Lettuce.
Tansy.
Wild Parsnip.
Yellow Thistle.

PINK, PURPLE-PINK, PURPLE

Burdock.
Catnip.
Coronilla.
Iron-Weed.
Joe-Pye Weed.
Marsh Mallow.
Milkweed.
Motherwort.
Musk Mallow.
Peppermint.
Rose Mallow.
Sabbatia.
Spearmint.
Star Thistle.
Thistles.
Wild Morning-Glory.

BLUE OR LAVENDER

Chicory.
Creeping Bellflower.
Harebell.
Iris.
Marsh Rosemary.
Nightshade.
Running Mallow.
Self-heal.
Teasel.
Vervain.
Viper's Bugloss.
Wild Burgamot.

RED OR BROWNISH RED

Apios.
Bee-Balm.
Cardinal Flower.
Hound's-Tongue.

GREEN

Dock.
Grapes
Lamb's-Quarters.
Poison Ivies.
Virginia Creeper.

INDEX OF ENGLISH NAMES

Agrimony, Hairy, 78
Agrimony, Tall, 78
Apios, 98
Arrow-head, Broad-leaved, 8
Aster, 274

Balsam, Sweet, 268
Balsam-Apple, 218
Bean, Wild, 98
Beard-tongue, 205
Bee-Balm, 183
Bellflower, Creeping, 221
Bindweed, Blue, 190
Bindweed, Field, 165
Bindweed, Fringed Black, 40
Bindweed, Hedge, 163
Birds' Nests, 140
Bitter Buttons, 264
Bitterroot, 152
Black-Eyed Susan, 247
Blackberry-Lily, 29
Bluebells of Scotland, 222
Blueweed, 170
Boneset, 262
Bouncing-Bet, 52
Buckwheat, Climbing False, 38
Bugloss, Viper's, 170
Burdock, Common, 270
Burgamot, Wild, 186
Burnet, Great American, 81
Bush-Clover, Narrow-leaved, 97
Bush-Clover, Violet, 96
Butter-and-Eggs, 201
Buttercup, 66
Butterfly-Weed, 161
Buttonweed, 116

Campion, Bladder, 50
Campion, Night-flowering, 48
Campion, Red, 50
Campion, White, 48
Cardinal Flower, 223
Carrot, Wild, 140
Catmint, 177
Catnip, 177
Cat-tail, Broad-leaved, 3
Cat-tail, Dwarf, 5
Charlock, 72
Checkerberry, 142
Cheese Flower, 116
Chelone, 198
Chicory, 228
Chinquipin, 60
Cinquefoil, Three-toothed White, 79
Clematis, 62
Clover, Alsike, 87
Clover, Old Field, 90
Clover, Pussy-Toed, 90
Clover, Rabbit Foot, 90
Clover, Red, 87
Clover, Sweet, 92
Clover, White, 88
Clover, Yellow, 89
Clover, Yellow Sweet, 93
Compass Plant, 233
Coronilla, 93

Cowbane, Spotted, 138
Creeping Charley, 146
Cucumber, Wild, 218

Daisy, 245
Daisy, Ox-Eye, 245
Daisy, Yellow, 247
Dalibarda, 77
Dandelion, Fall, 232
Day-Lily, Tawny, 19
Deer-Grass, 126
Devil's Paint Brush, 240
Dock, Broad-leaved, 42
Dock, Common, 42
Dock, Curled, 40
Dodder, Common, 166
Dogbane, Spreading, 152
Dog Fennel, 243
Duckmeat, 13
Duckweed, 13
Dyer's Greenweed, 85

Eel-Grass, 10
Elecampane, 242
Eupatorium, Purple, 260
Eupatorium, Tall, 260
Evening-Primrose, 131
Everlasting, Clammy, 269
Everlasting, Fragrant, 268
Everlasting, Pearly, 266

Fireweed, 128
Flag, Blue, 26
Flat Top, 263
Fleabane, Daisy, 238
Fleabane, Summer, 238
Fleur-de-lis, 26
Foxglove, Downy False, 204
Fox-Grape, Northern, 110

Garden Mint, 187
Garget, 46
Gerardia, Yellow, 204
Gipsy-Flower, 169
Goldenrod, 272
Goosefoot, White, 44
Grape, 109
Grim, the Collier, 240
Groundnut, 98

Harebell, 222
Hawkweed, Orange, 240
Heal-All, 179
Hemlock, Poison, 138
Hemlock, Water, 139
Herb Robert, 100
Honey-Bloom, 152
Horseheal, 242
Hound's-Tongue, 169

Indian Hemp, 155
Iris, Blue, 26
Iron-Weed, 263
Ivy, Poison, 104

Jamestown Weed, 192
Jewel-Weed, Golden, 106
Jimson-Weed, 191
Joe-Pye Weed, 260

Knotgrass, 38
Knotweed, Pink, 36

Lady Betty, 52
Lamb's-Quarters, 44
Lavender, Sea, 147
Lettuce, Hairy, 237
Lettuce, Hare's, 230
Lettuce, Prickly, 233
Lettuce, Red Wood, 237

Lettuce, Tall, 236
Lettuce, Wild, 236
Lettuce, Willow, 235
Lily, Canada, 21
Lily, Field, 21
Lily, Meadow, 21
Lily, Red, 24
Lily, Turk's-Cap, 22
Lily, Wood, 24
Live-Forever, 75
Lizard's-Tail, 31
Lobelia, Blue, 225
Lobelia, Great, 225
Lobelia, Red, 223
Loosestrife, Bulb-bearing, 144
Loosestrife, Purple, 124
Loosestrife, Whorled, 146
Lotus, American, 60
Lotus, Pink, of Asia, 61
Lychnis, Evening, 48

Mallow, Marsh, 115
Mallow, Musk, 118
Mallow, Rose, 114
Mallow, Running, 116
Marshmallow, 115
Marsh-Pink, 149
Marsh-Rosemary, 147
Mayweed, 243
Meadow-Beauty, 126
Meadow-Rue, Purple, 70
Meadow-Rue, Tall, 68
Milfoil, 249
Milk-Thistle, 230
Milkweed, Common, 157
Milkweed, Four-leaved, 161
Milkweed, Purple, 162
Milkweed, Swamp, 161
Milkwort, Purple, 103
Money, 146
Monkey-Flower, 200
Morning-Glory, Wild, 163
Motherwort, 181
Mullein, Common, 194
Mullein, Moth, 196
Muskmallow, 118
Mustard, Black, 71

Nettle, Stinging, 33
Nightshade, 190

Orpine, 75
Oswego Tea, 183

Parsnip, Cow, 134
Parsnip, Hemlock Water, 136
Parsnip, Wild, 135
Partridge Berry, 211
Partridge-Pea, 83
Partridge-Vine, 211
Penstemon, 205
Peppermint, 188
Pickerel-Weed, 17
Plantain, Common, 208
Plantain, Ribbed, 210
Pokeweed, 46
Polygala, Rose, 103
Pond-Lily, White, 55
Pond-Lily, Yellow, 58
Pondweed, Common Floating, 6

Queen Anne's Lace, 140

Ranstead Weed, 201
Red Robin, 100
Rhexia, 126
Rose of Plymouth, 149
Rose-Mallow, Swamp, 114
Rosemary, Marsh, 147
Rudbeckia, Tall, 248

SABBATIA, 149
St. John's-Wort, Common, 120
Sea-Lavender, 147
Self-heal, 179
Shellflower, 198
Silkweed, 157
Skullcap, 176
Smartweed, Common, 37
Snakeroot, Black, 65
Sow-Thistle, Common, 230
Sow-Thistle, Sharp-fringed, 232
Spatter-Dock, 58
Spearmint, 187
Spiderwort, 15
Star-Thistle, Purple, 259
Succory, 228
Sunflower, 273

TANSY, 264
Tape-Grass, 10
Tear-Thumb, 38
Teasel, Fuller's, 217
Teasel, Wild, 214
Thistle, Bull, 254
Thistle, Canada, 257
Thistle, Common, 254
Thistle, Creeping, 257
Thistle, Fragrant, 253
Thistle, Milk, 230
Thistle, Pasture, 253
Thistle, Purple Star, 259
Thistle, Roadside, 254
Thistle, Sow, 230
Thistle, Yellow, 252
Thoroughwort, 262
Tick-Trefoil, Canadian, 94
Tick-Trefoil, Naked-stemmed, 96
Tick-Trefoil, Showy, 94
Toadflax, 201
Touch-me-not, 106
Turnip, Wild, 74
Turtle-head, 198
Twin Berry, 211

VERVAIN, BLUE, 173
Vervain, European, 175
Vervain, White, 174
Vetch, Clover-headed, 93
Virginia Creeper, 112
Virgin's Bower, 62

WATER-LILY, WHITE, 55
White Weed, 245
Willow-Herb, 128
Wintergreen, 142
Woadwaxen, 85

YARROW, 249

INDEX OF LATIN NAMES

Achillea millefolium, 249
Agrimonia hirsuta, 78
Alismaceæ, 8
Althæa officinalis, 115
Ampelopsis quinquefolia, 112
Anacardiaceæ, 104
Anaphalis margaritacea, 266
Anthemis cotula, 243
Apios tuberosa, 98
Apocynaceæ, 152
Apocynum androsæmifolium, 152
Apocynum cannabium, 155
Arctium minus, 270
Asclepiadaceæ, 157
Asclepias incarnata, 161
Asclepias purpurescens, 162
Asclepias quadrifolia, 161
Asclepias Syriaca, 157
Asclepias tuberosa, 161
Aster, 274

Balsaminaceæ, 106
Belamcanda Chinensis, 29
Boraginaceæ, 169
Brassica nigra, 71
Brunella vulgaris, 179

Cæsalpiniaceæ, 83
Campanula rapunculoides, 221
Campanula rotundifolia, 222
Campanulaceæ, 221
Carduus adoratus, 253
Carduus arvensis, 257
Carduus lanceolatus, 254
Carduus spinosissimus, 252
Caryophyllaceæ, 48
Cassia chamæcrista, 83
Castalia odorata, 55
Centaurea calcitrapa, 259
Chelone glabra, 198
Chenopodiaceæ, 44
Chenopodium album, 44
Chrysanthemum leucanthemum, 245
Cichorium intybus, 228
Cicuta maculata, 139
Cimcifuga racemosa, 65
Circium lanceolatum, 254
Clematis Virginiana, 62

Commelinaceæ, 15
Compositæ, 228
Conium maculatum, 138
Convolvulaceæ, 163
Convolvulus arvensis, 165
Convolvulus sepium, 163
Coronilla varia, 93
Crassulaceæ, 75
Cruciferæ, 71
Cucurbitaceæ, 218
Cuscuta gronovii, 166
Cuscutaceæ, 166
Cynoglossum officinale, 169

Dalibarda repens, 77
Dasystoma flava, 204
Datura stramonium, 191

Daucus carota, 140
Desmodium Canadensis, 94
Desmodium nudiflorum, 96
Dipsacaceæ, 214
Dipsacus fullonum, 217
Dipsacus sylvestris, 214

Echinocystis lobata, 218
Echium vulgare, 170
Epilobium angustifolium, 128
Epilobium coloratum, 130
Epilobium hirsutum, 128
Ericaceæ, 142
Erigeron annuus, 238
Eupatorium perfoliatum, 262
Eupatorium purpureum, 260

Gaultheria procumbens, 142
Genista tinctoria, 85
Gentianaceæ, 149
Geraniaceæ, 100
Geranium robertianum, 100
Gerardia flava, 204
Gnaphalium decurrens, 269
Gnaphalium obtusifolium, 268

Helianthus, 273
Helianthus decapetalus, 274
Helianthus divaricatus, 273
Hemerocallis fulva, 19
Heracleum lanatum, 134
Hibiscus moscheutos, 114
Hieracium aurantiacum, 240
Hypericaceæ, 120
Hypericum perforatum, 120

Impatiens biflora, 106
Impatiens fulva, 106
Impatiens pallida, 108
Inula helenium, 242
Iridaceæ, 26
Iris versicolor, 26

Labiatæ, 176
Lactuca Canadensis, 236
Lactuca hirsuta, 237
Lactuca saligna, 235
Lactuca scariola, 233
Lappa officinalis, 270
Lemna minor, 13
Lemnaceæ, 13
Leontodon autumnale, 232
Leonurus cardiaca, 181
Lespedeza angustifolia, 97
Lespedeza violaceæ, 96
Liliaceæ, 19
Lilium Canadense, 21
Lilium Philadelphicum, 24
Lilium superbum, 22
Limonium Carolinianum, 147
Linaria vulgaris, 201
Lobelia cardinalis, 223
Lobelia syphilitica, 225
Lychnis alba, 48
Lychnis dioica, 50
Lychnis noctiflora, 48
Lysimachia nummularia, 146
Lysimachia quadrifolia, 146
Lysimachia terrestris, 144
Lythraceæ, 124
Lythrum salicaria, 124

Malva moschata, 118
Malva rotundifolia, 116
Malvaceæ, 114
Meibomia Canadensis, 94
Melastomaceæ, 126
Melilotus alba, 92
Melilotus officinalis, 93

Mentha piperita, 188
Mentha spicata, 187
Mentha viridis, 187
Micrampelis lobata, 218
Mimulus ringens, 200
Mitchella repens, 211
Monarda didyma, 183
Monarda fistulosa, 186

NAIADACEÆ, 6
Nelumbo lutea, 60
Nelumbo Nelumbo, 61
Nepeta cataria, 177
Nuphar advena, 58
Nymphæa advena, 58
Nymphæa odorata, 55
Nymphæa tuberosa, 55
Nymphæaceæ, 55

ŒNOTHERA BIENNIS, 131
Onagra biennis, 131
Onagraceæ, 128

PAPILIONACEÆ, 85
Pardanthus sinensis, 29
Parthenocissus quinquefolia, 112
Pastinaca sativa, 135
Penstemon digitalis, 205
Phytolacca decandra, 46
Phytolaccaceæ, 46
Plantaginaceæ, 208
Plantago lanceolata, 210
Plantago major, 208
Plumbaginaceæ, 147
Polygala sanguinea, 103
Polygala viridescens, 103
Polygalaceæ, 103
Polygonaceæ, 36
Polygonum aviculare, 38
Polygonum cilinode, 40
Polygonum lapathifolium, 37
Polygonum Pennsylvanicum, 36
Polygonum persicaria, 37
Polygonum scandens, 38
Pontederia cordata, 17
Pontederiaceæ, 17
Potamogeton natans, 6
Potentilla tridentata, 79
Poterium Canadense, 81
Primulaceæ, 144
Prunella vulgaris, 179

RANUNCULACEÆ, 62
Ranunculus acris, 66
Rhexia aristosa, 127
Rhexia Virginica, 126
Rhus microcarpa, 104
Rhus radicans, 104
Rhus taxicodendron, 104
Rosaceæ, 77
Rubiaceæ, 211
Rudbeckia hirta, 247
Rudbeckia laciniata, 248
Rumex crispus, 40
Rumex obtusifolius, 42

SABBATIA ANGULARIS, 151
Sabbatia campanulata, 151
Sabbatia choloroides, 151
Sabbatia dodecandra, 151
Sabbatia gracilis, 150
Sabbatia stellaris, 149
Sagittaria latifolia, 8
Sagittaria variabilis, 8
Sanguisorba Canadensis, 81
Saponaria officinalis, 52
Saururaceæ, 31
Saururus cernuus, 31

Scrophulariaceæ, 194
Scutellaria integrifolia, 176
Sedum telephium, 75
Sibbaldiopsis tridentata, 79
Silene latifolia, 50
Silene vulgaris, 50
Sium cicutæfolium, 136
Solanaceæ, 190
Solanum dulcamara, 190
Solidago, 272
Solidago nemoralis, 273
Solidago sempervirens, 273
Sonchus arvensis, 231
Sonchus asperis, 232
Sonchus oleraceus, 230
Statice limonium, 147

Tanacetum vulgare, 264
Thalictrum polygamum, 68
Thalictrum purpurescens, 70
Tradescantia Virginiana, 15
Trifolium, 86
Trifolium arvense, 90
Trifolium aureum, 89
Typha angustifolia, 5
Typha latifolia, 3
Typhaceæ, 3

Umbelliferæ, 134
Urtica dioica, 33
Urticaceæ, 33

Vallisneria spiralis, 10
Vallisneriaceæ, 10
Verbascum blattaria, 196
Verbascum Thapsus, 194
Verbena hastata, 173
Verbena officinalis, 174
Verbenaceæ, 173
Vernonia noveboracensis, 263
Vitaceæ, 109
Vitis cordifolia, 110
Vitis labrusca, 110
Vitis vulpina, 109

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